FRIGIDAIRE LAUNCHES SUMMER CAMPAIGN

(Concluded from Page 1, Column 1) erties for demonstration of the features of porcelain, principles of Stataflex insulation, economy of operation, ice cube freezing capacity, automatic

ice tray release, etc.

The stage was set with a model dealer showroom and Mr. Allen carried on for the instruction of the audience the demonstrations as they will be given to prospects.

Probably the most spectacular of the

illustrations was that to show power of the ice tray release.

Mr. Allen summoned a 250-pounder from the audience, and while the stooge stood on the tray lifted the re-lease handle with his little finger, pulling the heavyweight into the air.

He poured denatured alcohol on the dulux and porcelain finishes to prove their resistance, soaked acid-resisting and ordinary porcelain covered plates in lemon juice, smoked a cabinet with an old-fashioned kerosene lamp, smeared grease crayon on the porce lain, and wiped it off with a handker-

He placed electric heaters in action to show the reflecting and heat resisting qualities of Stataflex.

Mr. Allen then displayed the sales promotion materials to be supplied dealers. Desk-size easels with charts outlining the selling points and a

carrying kit size are included.

Window banners, window displays, wall posters, and table hangers pointing out the way in which "A Key to Meal Planning" helps housewives plan menus, were shown in the stage show-

The July-August advertising plans were outlined by Mr. Pierce, who explained every medium of reaching the public and drawing prospects into showroom which is to be employed.

Newspaper copy will continue to fea-ture the "uses no more electric cur-rent than one ordinary lamp bulb" theme, according to Mr. Pierce, but in addition, the various features such as automatic tray release, automatic de-frosting, food storage space, and the available room for tall bottles will be stressed.

The advertising will break next week-end in more than 500 newspapers and will consist of frequent insertions and will consist of requestions during the six-week period.

National copy in color will appear in Collier's, Good Housekeeping,

in Collier's, Good Housekeeping, Saturday Evening Post, and other publications, he said.

Five million rotogravure tabloid sections have been shipped to dealers, he announced, for house to house dis-tribution and for showroom handouts.

Outdoor posters have been prepared and will be placed in strategic locations at the discretion of individual

"But a real feature of this super selling program," Mr. Pierce said, "is the 13-time radio program that will go on the air over a national Columbia network of 54 stations Friday, July 14.

"Jane Froman, singer, Howard Marsh, stage star, and Jacques Renard's orchestra make up the program. The broadcasts will be of quarter-hour duration following the Old Gold programs on Wednesday nights and the Chesterfield programs on Fridays."

In addition, direct-mail pieces will be

available for dealers, he said.

The six-week air-conditioning sales

Filtrine

Water Coolers

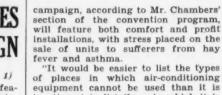
STORAGE—DRY SYSTEM

DUE TO STORAGE RESERVE, chilled water is always available to meet "peak-loads," in excess of condensing unit hourly capacity. DIRECT CONTACT COOLING.

Steel Pipe Coils

DEHYDRATED—CLEANED Filtrine Mfg. Co.

heavy, steel pipe, evaporator expan-coil submerged in drinking water instant heat transfer. Strength of eliminates possibility of refrigerant into drinking water or water into



to attempt to list those in which it is necessary," Mr. Chambers said. He cited the fact that the first half-

dozen Frigidaire selling men to qualify for the 1933 B.T.U. club, organization of honor salesmen, did so on dollar volume attained by making air-condi-

tioning equipment sales.
"The comfort market for air-conditioning units is ripe. The profit field is a year-'round proposition that salesmen and dealers can cultivate all the time because merchants of all classifications are realizing that to increase retail business, conditions must be more comfortable for patrons," he stated.

The introduction of W. D. Mc-Elhinny, who recently returned to Frigidaire to head up its commercial selling activities, marked his first public appearance since his return.

Commercial sales will be made this summer by the commercial men who see more people, McElhinny stated, and that phrase "See More People," is the basic theme of the July-August commercial program. Frigidaire's business-building plan

for retail food vendors is meeting with exceptional success, he said, and the effort in the remainder of the summer will be toward increasing its accept-

Retail merchants have a new buoy

Retail merchants have a new buoyancy in their attitude, he explained,
because of higher prices for foodstuffs
and longer profits to them.

The way in which Frigidaire's new
beer coolers are selling was cited as
proof that food retailers are buying.
Water cooling, too, Mr. McElhinny
said, is showing up better and many
office and industrial installations are and industrial installations are

FRIGIDAIRE ROOM COOLERS INSTALLED IN NEW YORK

(Concluded from Page 1, Column 2) conditions, the Sterling Mint Co. has installed air-conditioning equipment, Mr. Eakin said.

A large installation also has just been completed in the drying room of the H. E. Smith Co., maker of stencil paper. This installation is primarily designed to overcome the excessive humidity that holds up production and increases wastage during the sultry season in the East.

Wildman and Williams, color photographers who take many colorful pic tures used in color advertising, have put units into service in the developing room to prevent injury to sensitive films because of abnormal heat.

The models in Stern's lingerie

shoppe, a leading Broadway store, now display their wares in comfort and free from perspiration. Units for their comfort and for the comfort of patrons have been functioning through the most recent hot spell with the result that customers buy more, proprietors

The National Lead Co. is now using controlled atmosphere in its testing laboratory in Brooklyn, according to Mr. Eakin

Other typical installations that show the varied uses to which the equipnent is being put, according to Mr. Eakin, are:

The funeral parlor of Henry Leber, Union City, N. J., which has a 10-ton compressor and three store-cooling

The Tavern, widely known restaurant which installed 18 tons of equip-ment last year and now has added two

more tons for a private dining room.

The executive offices of Solomon Brothers & Rutzler, brokers. The chocolate dipping room of Ming

Toy Sweets.

The Roxy Beauty Salon. The Whelan cafeteria.

O. D. Duncan, attorney, for his office. Offices of Triboro Coach Co., International Tailoring Co., Mutuelle Solvay of America, Inc., and International Minerals & Metals Corp. The brokerages of H. R. Winthrop & Co., and Jacquelin and De Coppet, a 17-ton unit. The candy store of F. J. Mason. Other installations have been made

in homes ranging from mansions to bungalows, Mr. Eakin said, proving that the air-conditioning era is arriv-

AIR CONDITIONERS SOLD BY COMMONWEALTH EDISON

(Concluded from Page 1, Column 4) printer, 75 hp.; Hales & Hunter, malt company, 58 hp.; nine restaurants: two DeMets, Triangle, Harding's, and Mitchells, 365 hp.; five theaters: Windsor, Buckingham, Howard, Embassy, and West End, 396 hp.; and three night clubs: George McRoberts, Chez

Paris, and Cafe de Alex, 60 hp.

Air-conditioning equipment has also been placed in several office buildings recently, notably for Burroughs Adding Machine Co. in the Morton build-ing, in the North American building, and in a section of the Merchandise

FALL DRIVE SEPT. 30

(Concluded from Page 1, Column 3) Institute in Chicago, is embodied in an announcement by Executive Chairman James E. Davidson, covering the bureau's program for the balance of

'The contest plan involves the awarding of prizes for the best cooperative electric refrigeration shows put on by local bureaus," stated Mr. Davidson.

"Population and the number of domestic meters in each participating community, the amount spent in each instance on the exhibit and general promotion work, the degree to which sales outlets cooperate and. finally, the results in actual refrigerator sales and in prospects obtained will be considered in judging the con-test. With details of the contest worked out along these general lines it will be possible for any community to win, regardless of its size.

is proposed to offer a first prize of \$500, with six lesser awards scaled down in amounts ranging from \$250 to \$25."

2,500 DEALERS ATTEND MAJESTIC REUNION

(Concluded from Page 1, Column 3) taken on conducted tours of the various Grigsby-Grunow plants.

The banquet and Mardi Gras cele-

bration was held at the Drake hotel.

B. J. Grigsby, president and chairman of the board, and Le Roi J. Williams, vice president and general manager, extended welcomes to the visitors, and John F. Ditzell, assistant vice president and general sales manager, acted as toastmaster. Following the dinner the guests were entertained by nationally known stage and radio stars. liam R. Hamilton & Co., to cool the

BUREAU WILL OPEN Air-Conditioning Equipment Installed In Wide Variety of Detroit Shops

(Concluded from Page 1, Column 1) equipment. Detailed stories of these installations were carried in the June 7 issue of ELECTRIC REFRIGERATION NEWS.

Patrons of Rheaume's restaurant at 33 John R. St. are being comfortcooled by a new system using 10 tons of Universal Cooler refrigeration with Trane coils. Three 3-hp. Carrier com-pressors connected to a Carrier storecooling unit have been installed in Fischer's German restaurant at 1250 Washington Blvd.

A cooling system using four 3-hp. Carrier compressors which serve a Carrier store unit have been installed in the Sanders confectionery-bakery shop in Detroit's Eaton Tower building. The Goody Nut Shop in the United Artists building is now cooled by a system having a 3-hp. Carrier compressor connected to two suspended-type cooling units.

Another of these nut shops in the Fox Theater building has been cooled this summer by installation of ducts leading from the main air-cooling sys-

tem used in the Fox theater
Two jewelry stores have been equipped with comfort cooling this summer. One is Sallan's (on Woodward Ave.), where two 3-hp. Frigidaire compressors connected to one store-cooling unit and two suspended-type cooling units have been installed. The other is Friedberg's on Griswold St., using 10 tons of Frigidaire equipment connected to two 3-ton store-coolers and a 1-ton cabinet-type unit.

The Maude Fleming Hair Shop is now cooled by a system using a 5-hp. Universal Cooler compressor. The duct method of air delivery is used. A 3-hp. Frigidaire compressor has been installed in the funeral parlor of Wilestablishment with three cabinet-type cooling units.

Offices of the Detroit Wax Paper Co. are being conditioned by a duct system using two 3-ton Frigidaire compressors for refrigeration. And the Cadillac Motor Car Co. is now cooling some of its offices with a 7½-hp. Frigidaire compressor which operates six cabinet-cooling units.

Nearing completion now is a 10-ton air-conditioning system in the switch-board room of the Detroit Edison Co.'s main building at 2000 Second Ave. A 10-ton Universal compressor is located in the basement, and is connected with eight Carrier Atmospheric cabi-nets in the large room on the fourth floor, and with two other cabinet units in nearby private offices.

The cabinet units are being con-nected with the building's steam supply, and will be used for heating the room and offices in the winter. Russek's fur and women's clothing

Russek's fur and women's clothing store on Woodward Ave. has been equipped with a cooling system using a 10-hp. Frigidaire compressor connected with two 3-ton store-cooling units and two cabinet-cooling units.

An office of the Ray Day Piston Co. is being cooled this summer by a 1-ton Carrier compressor and exhibit cool.

Carrier compressor and cabinet-cooling unit. A 1½-hp. Frigidaire compressor and cabinet-cooling unit have been installed in an office of the Parker Rust Proof Co.

Another office installation is that of the Federal Motor Truck Co., where a 2-hp. Carrier compressor operating two cabinet-cooling units has been placed

Installations of two systems each using a 1½-hp. Frigidaire compressor and a cabinet-cooling unit have been made in Detroit residences this season

HORSE SENSE FROM FIJI

YES, even in the South Seas the Fiji Islanders understand active cooperation. When the people of a village get hungry, they join hands and wade out into the sea. Joining together in a half circle, they move shoreward and the fish trapped in this human net are driven into shallow water and easily caught.

If electric refrigeration dealers, distributors and central station men will join hands in each community to advertise electric refrigeration and to carry on cooperative exhibits, they will catch public interest in refrigeration. Sales will be more easily made.

Experience shows that it costs less to keep a community electric refrigeration-conscious by

cooperation than by the individual effort of sales Sell the general theme of electric refrigeration by cooperative advertising and cooperative exhibits. Then sell electric refrigerators by individual, competitive advertising and sales efforts. Encourage such action in your community. INVEST IN AN ELECTRIC REFRIGERATOR

ELECTRIC REFRIGERATION BUREAU

420 LEXINGTON AVENUE, NEW YORK CITY



ELECTRIC

REFRIGERATION NEWS

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS

Vol. 9, No. 12, SERIAL No. 226

ed

-type

Paper duct

oling

rates

ritch-Co.'s

cabi-

units

con-

team ating

inter.

thing

using

conoling

its. n Co.

1-ton

-cool-

comhave the

at of

g two

each been Copyright, 1933, by Business News Pub. Co

DETROIT, MICHIGAN, JULY 19, 1933

THREE DOLLARS PER YEAR TEN CENTS PER COPY

WESTINGHOUSE REFINES LINE AS 'MASTER SERIES'

Big Units Unchanged; 4.5-Ft. Model Priced At \$99.50 f.o.b.

MANSFIELD, Ohio-Basically unchanged, but embodying a number of refinements, a new line of Westing-house domestic refrigerators is being introduced to the company's sales or-ganization this week. And next week, ganization this week. And next week, there will be launched a midsummer selling campaign, backed by national advertising and a variety of other sales helps, to assist Westinghouse retailers in selling the new "Master Series."

The new line has sight reds.

The new line has eight models, The new line has eight models, ranging in size from 4.2 cu. ft. to 20.1 net storage capacity. Three largest models—AP-90, AP-130, and AP-200—are merely continued from the company's old line. Base price of the series is \$99.50 f.o.b. factory, with freight, installation, and tax extra.

In appearance, the new refrigera-tors are quite similar to those made tors are quite similar to those made by Westinghouse last year and up to the present time, but have a new smooth-edged control panel and semi-concealed chrome hardware—with a vertical steel rib that may be pushed with the knee or pulled with a finger to open the food chamber door—which

give the cabinet a touch of "newness." Front and sides of the new cabinet are made from one piece of steel, with another piece welded in at the back. One feature of the new line is a seven-point temperature selector with

an "Economatic" operating position which is for use in preserving foods (Concluded on Page 4, Column 4)

FRIGIDAIRE DEALERS TO SET OWN QUOTAS

DAYTON - The entire Frigidaire sales organization is now engaged in a selling drive in which dealers and salesmen are bidding on their own ability to produce a certain amount of

ability to produce a certain amount of business in a specified period. In this "Set Your Own Quota Campaign," each salesman estimates the amount of business he can turn in during July and August, then sets his own quota. If he makes it he wins. But if he fails to set a quota early in the contest he gets nothing but the commission he would have received had there been no contest. had there been no contest.

Men who make their quotas, however, will receive a certain award, plus an added commission on the amount of business they bring in over the amount of their bids.

Lowest quota a contestant may set (Concluded on Page 4, Column 1)

FORCED AIR COOLS BEER **NEW GIBSON PRODUCT**

GREENVILLE, Mich.—A self-con-ained bottled beer cooler in which hieve rapid cooling has been introuced by Gibson Electric Refrigera-or Corp. of this city.

The storage compartment has a capacity of 72 12-oz. beer bottles, and is deep enough to allow storage of quart bottles if desired.

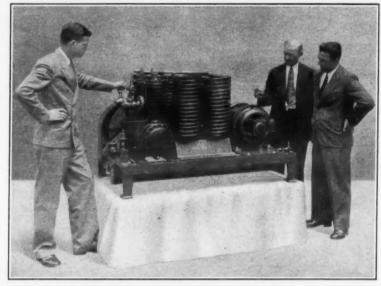
The evaporator, which is of the finned tube type, is mounted horizontally approximately 2 in. above the of the compartment, with a ght clearance between it and the des of the compartment. A wire nelf is placed on top of the evapora-(Concluded on Page 6, Column 1)

CAPEHART TO DIRECT SALES DEPT. OF WURLITZER

NORTH TONAWANDA, N. Homer E. Capehart, former president of the Packard Mfg. Co., has been sen to head the sales department Rudolph Wurlitzer Mfg. Co. here.

In addition to manufacturing Mo-awk electric refrigerators, the Rudolph Wurlitzer organization makes radios, washing machines, pianos, phonographs, pipe organs, and a com-plete line of orchestral and band astruments.

G. E.'s Newest Product



H. T. Hulett, commercial engineer; Clark Orr, designing engineer; and Walter Landmesser, commercial division manager, study the salient points on General Electric's new 10-ton condensing machine unit for commercial

Three New Progress Models Announced by Grunow

CHICAGO-Supplementing the line of Grunow electric refrigerators intro-duced last fall, Grunow Corp. has just brought out three new lower-priced "Progress" models using Carrene refrigerant, and the same refrigerating mechanism as the first models.

The new models have a stylish appearance (see picture on page 6 of this issue), but without the flush-type doors and rounded corners of the cabinet which featured the early models.

net which featured the early models.

The main line will be termed "De-Luxe" hereafter, as contrasted with the new "Progress" models, according to H. C. Bonfig, sales manager.

Priced in Detroit at \$119.50, \$139.50, and \$169.50, the three new Progress models (50G, 60G, and 70G) have 4.5, 5.5, and 6.8 cu. ft. of net storage capacity. Prices in other territories are higher in some instances, due to greater distance from the factory.

Display models were furnished to

Display models were furnished to distributors this week, Mr. Bonfig states, and 12,000 orders have already been placed for the new models. Cabinet production at the Briggs plant in Detroit was getting under way last week, and by Monday of this week hit

The new cabinets have 8-in. legs, three coats of Dulux on the outside, and have porcelain food compartment

liners. Exterior cabinet design is more conventional than the DeLuxe line, but is styled with an embossed figure on the front, with a Grunow crest in the center of the door. The evaporator is finished in white porcelain, and (Concluded on Page 6, Column 4)

Rotogravure

The story of A Century of Progress, Chicago's 1933 World's Fair, is told with pictures in this issue, in the first rotogravure section ever put out by the Business News Publishing Co.

Exhibits of the General Electric Co. at the Fair are featured in this first "A Century of Progress Supplement" to the News. Next week another 8-page rotogravure section, featuring General Motors and Frigidaire exhibits, will appear.

A third rotogravure supplement, pictorializing Westinghouse at the Fair, is scheduled for the Aug. 2 issue of the News. Others will probably follow in subsequent issues.

Hearings Start Today on Code For All Electrical Industries

Kelvinator Raises Salaries of All Employes 10%

DETROIT—Employes of Kelvinator Corp. have been given an increase in compensation, averaging 10 per cent, and effective as of July 1, G. W. Mason, president, announced July 11.

All factory employes, and those on salary as well, are affected, both in the United States and in leading cities of other countries of the world.

"This move is being made," President Mason stated, "because we believe with the administration that increased buying power is a necessary factor in the furtherance of business recovery. Fortunately, the sales vol-ume which we have enjoyed since last March has justified this action.

"Now we are turning our attention to a program calculated to keep em-ployment at peak figures. The sea-sonal character of our business, in the past, has resulted in a midsummer reduction in employment. Our current program is designed to minimize this tendency."

Kelvinator Corp. reported last week that it had passed all previous records in the June quarter when the company shipped 110,989 refrigerators, a gain of 73.3 per cent over the corresponding quarter of 1932.

SEARCH STARTED FOR GIBSON GIRL OF 1933

GREENVILLE, Mich.—Tying in with its current sales contest for dealers, the Gibson Electric Refrigerator Corp. is launching a nation-wide quest for "the Gibson Girl of 1933," to bring public attention to the company's name and product.

Idea for the contest was conceived last year by W. R. Marshall, Gibson's advertising and sales promotion direc-tor, but was not planned as a national campaign until news stories and style articles this season began calling attention to the quite general revival of styles similar to those of the "Gibson Girl" of the Nineties.

Each Gibson dealer will be asked to invite local girls to enter the contest by filling out application forms. Entrants will then be photographed in garments which show definitely the Gibson Girl influence on 1933 styles, (Concluded on Page 6, Column 2)

Basic Wage of 35 Cents, 36 & 40-Hour Week Approved by Nema SUPPLEMENTARY CODES TO BE DRAFTED AFTER GENERAL RULES ARE APPROVED

DETROIT—Hearings on the code proposed by the National Electrical Manufacturers Association to govern the electrical industry in accordance with the provisions of the National Industrial Recovery Act will be held Wednesday, July 19, in Washington, D. C., under Deputy Administrator W. L. Allen.

A llen.

A meeting of the Refrigeration Division of Nema to consider the formulation of a supplementary code as provided in the major code probably will be called immediately following approval of the Nema code by President Roosevelt, according to Louis Ruthenburg consultant to the Refrie Ruthenburg, consultant to the Refrigeration Division.

eration Division.

To this meeting will be invited, in addition to the members of the Refrigeration Division, manufacturers of electric refrigerators whose applications for membership to Nema have been received, Mr. Ruthenburg says.

The supplementary code drawn up by the Refrigeration Division will be submitted to the board of governors of Nema with the request that it be incorporated in the general code. After approval by the board of governors.

approval by the board of governors, it will probably be submitted to the Deputy Administrator for such government hearings and approval as may be deemed necessary, according to Mr. Ruthenburg.
"It is proposed to operate the Re-

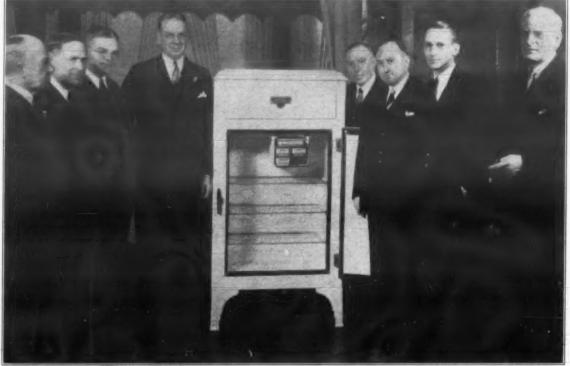
"It is proposed to operate the Re-frigeration Division of Nema through an executive committee," Mr. Ruth-enburg states. "The Division Chair-man, who is elected according to the by-laws of the National Electrical Manufacturers Association, is chair-man of this committee which consists of four additional executive or research of four additional executive or associ-ate representatives of Division members. The chairman's appointments to the committee are approved by a majority of the members of the Division.
"The general code of the National
Electrical Manufacturers Association Electrical Manufacturers Association provides for the administration of the code by a supervising agency appointed or approved by the Board of Governors. In the case of the Refrigeration Division, supervising agency will be the executive committee.

"Until the general code has gone through a public hearing and as gone

"Until the general code has gone through a public hearing and been approved by the administration, the subject matter of the supplemental code for the Refrigeration Division cannot be definitely determined. It is reasonable to assume, however, that this supplemental code will embody principles of fair trade practice for the spe-

(Concluded on Page 16, Column 1)

Okehed by Board of Strategy



Westinghouse officials inspect new "Master Series" model. Standing, left to right: F. A. Merrick, president; N. G. Symonds, vice president in charge of sales; J. S. Tritle, vice president and general manager; A. W. Robertson, chairman of board; S. M. Kintner, vice president in charge of engineering; R. C. Cosgrove, manager of refrigeration division; R. E. Imhoff, sales manager, merchandising dept.; and C. H. Champlain, works manager.

FRIGIDAIRE SALES GAIN IN ALL THREE DIVISIONS

AYTON-Increase in sales volume in all three of its divisions—household, commercial, and air conditioning—was reported last week by Frigidaire Corp. for June in comparison with June

for June in comparison with June 1932, and May of this year.
Only a few of the 44 districts of the company failed to produce increased volume in June, according to H. W.

This year, June dollar volume on household sales was 15 per cent over May and 53 per cent over June, 1932. May of this year showed a 42 per cent gain over May, 1932, said Mr. Newell. The air-conditioning division of the company showed a dollar volume gain of 175 per cent in June compared with the same month in 1932.

The sales districts which embody (Concluded on Page 6, Column 3)

OBERT TO MANAGE SALES AND SERVICE FOR BRUNNER

UTICA, N. Y .- Frank C. Obert, for five years eastern commercial sales representative for the Copeland Sales Co., has been appointed manager of sales, service, and engineering for the Brunner Mfg. Co. here.

BY GEORGE F. TAUBENECK ---

Electrical Bldg.

Admission free Architect: Raymond Hood

LOCATION: On eastern shore of South Lagoon, just south of Science Bridge. This building is joined to the Radio & Communications building. It forms a large semi-circle around a control court which court is a large to the semi-circle around a control court which court is a large semi-circle around a control court with the control court with the control court with the contro central court, which contains electri-cal displays, one of which is a strik-ing electrically illuminated fountain. Two pylons flanking a flight of stairs which lead from this court into the great central hall carry giant sculptured figures representing Atomic Energy and Stellar Energy. Another entrance is provided at the water gate on the west side, between two pylons 100 ft. high. Figures typifying Light and Sound appear on these pylons.

GREAT CENTRAL HALL: Thirteen columns, all 13 ft. in diameter, support the roof of the hall. Each column is featured by black and red murals telling the story of the elec-trical industry executed by Charles B. Fall. A sign 150 ft. long illuminates the facade of a long balcony, under which is a neon display.

eXHIBITS OF INTEREST: "House of Magic" and talking all-electric kitchen (General Electric Co.); wide range of electrical exhibits showing the development of electricity (Westinghouse Electric & Mfg. Co.); a 90-ft. diorama on the balcony showing production, distribution, and utilization of electric power (Companies Exhibit Commission of 1933, part of Central Station exhibit); how electricity is taught (Coyne Electrical School); Station exhibit); how electricity is taught (Coyne Electrical School); complete model laundry (Altorfer Bros. Co.); part of Exide battery used by Admiral Byrd on his Antarctic expedition (Electric Storage Battery Co.); and exhibits of electric refrigerators and companion appliances by Kelvinator Corp. and Norge Corp.

Communications Bldg.

Admission free Architect: Raymond Hood

The part science has played in fa-cilitating communication, through ra-dio, telephone, and telegraph.

LOCATION: South of Science Bridge and Hall of Social Science. Emphasizing the connection of communica-tion with electricity, this building is joined to the Electrical Building.

INTERESTING EXHIBITS: American Telephone & Telegraph Co., and International Telephone & Telegraph Co.: Demonstration and working models of manual and dial switchboards; teletype display; how "inverted speech" keeps radio telephone conver-sations secret; several telephone code conversations traveling over the same

wire simultaneously.

Radio Corp. of America: How radio sets work, shown by cathode-ray tubes; Victor Color organ; replica of Radio City, New York; photographic exhibit of prominent radio personalities; the-ater, in which talks and exhibitions of radio work are given, together with broadcast programs; use of radio on shipboard; automatic transmission and reception; printing of pictures by ra-dio; complete manufacturing outfit (E. T. Cunningham and RCA Radiotron

Stewart-Warner Corp. (on balcony connecting Electrical and Radio & Communication buildings): Radios, automobile accessories, refrigerators; a complete Hollywood moving picture

Western Union Telegraph Co.: Historical display of equipment instru-mental in the development of telegraph, from Morse's transmitter to the high-speed present-day stock ticker; a Western Union Bulletin ticker recording news flashes; high-speed sending and receiving sets used in transmit-ting cables; automatic printer, fire protection, sprinkler suffusion, burglar alarms, etc.

COMMUNICATIONS GARDEN: joins the building on the Lake Michigan side. It is an attractive modern interpretation of the Villa D'Este gar-dens in Italy. An echo room, where echoes are produced electrically, opens

Edison Memorial Bldg. Admission free

A display of Thomas A. Edison's inventions, with original models of his contributions to science, and graphic demonstration of their effect on the

LOCATION: Between the Electrical Group and the South Lagoon. Around the memorial is a garden brought from Edison's home in Orange, N. J.

Hall of Science

Admission free Architect: Paul Cret

Exhibits of the major sciences with the exception of astronomy, and in-dustrial applications of science.

LOCATION AND DESCRIPTION: At the south end of the Avenue of Flags

What to See At the Fair

Because so many dealers, distributors, and other members of the electric refrigeration industry who visit A Century of Progress have only a week or less to spend seeing the exhibits, numbers of them have been finding themselves unable to "take in" all the things they really felt they should see.

Hence this condensed guide to exhibits which should be of especial interest to refrigeration men is furnished with the hope that it may help those coming to the Fair during the next few weeks budget their time and plan their trips most advantageously and expeditiously. It will be concluded next week.

A Century of Progress exposition is a liberal education in itself for all those who will take the time to study it even in a casual fashion. Most important thing is to know WHAT TO

In a series of rotogravure sections, beginning with this issue, the News hopes to present its wonders pictorially-so that those who can't leave their rushing business this summer may see it by proxy, and so that those who do get there may have handsome souvenirs of their trip.

(Lief Ericson Drive). It is a large U-shaped building, the two arms of the U encircling the Court of Honor which overlooks the South Lagoon. A carillon tower is located in the south-west corner, with manipulating instruments on the balcony below. Ramps connect the ground floor with the main, floor and balcony.

DIVISIONS OF THE BUILDING: On the ground floor are exhibits of medicine, dentistry, pharmacology, and applications of science to industry. In addition, this floor houses several lecaddition, this noor nouses several lec-ture rooms, and a space devoted to the game of bridge. The main floor north wing contains, from east to west, a Danish and Italian section, and geology, mathematics, and phys-ics sections. Chemistry is represented in the Great Hall, which connects the two wings, along with general science and biology. Other biological exhib-its take up a large part of the south wing, while a trustees' club occupies the extreme eastern end of this wing.

MEDICINE AND PHARMACOLOGY: In the eastern end of this section is a figure of a 6-ft. transparent man, made in Germany of cellon at a cost of \$10,000, which required 18 months to make. Complete functions and organs of the body are shown. Radiating out from this figure are exhibits of contributions made to medicine by various countries of the world.

Foreign exhibits-Life and work of Robert Koch, discoverer of tubercle of Robert Koch, discoverer of tubercle bacillus (Robert Koch Institute, Ger-many); story of Sir Henry Well-come's work against the yellow fever mosquito (Wellcome Research Insti-tute, England); life and work of Louis Pasteur, discoverer of the nasteurization process (Pasteur Instipasteurization process (Pasteur Insti-tute, France); pioneers of Italy in pathology, anatomy, and physiology (Italy); work of Auetrian medical scientists; structure and function of the nervous system (Holland); history of James McGill, development of the Montreal General Hospital, work of photograph (McGill University, Can-

American exhibits—History of surgery in the United States (American College of Surgeons); story of medicine from early days of the country up to the present time (American Medical Association); history of American pharmacy, and descriptions of 700 remedies for diseases running back to 1550 B. C. (American Pharmaceutical Association); advances of science in curing cancer (American Society for Control of Cancer, and New York City Cancer Committee); medical progress and history of medicine in city of Chicago (Chicago Board of Health, Chicago Medical Society and Women's Auxiliary, Chicago Tubercu-losis Institute, and Chicago Municipal Sanitarium); motion pictures showing Harvey's discovery of circulation of the blood, of blood transfusion, of glandular functions, use of X-ray, and formation and growth of human cells (Cleveland Clinic Foundation); results of treatment for infantile paralysis in the institution founded by President Roosevelt (Georgia Warm Springs Foundation); treatment of diseases of the digestive traci, thyroid gland, sympathetic nervous system (Mayo Clinic); history of modern anaesthetics

and first use of ether in 1842 by Dr. Crawford W. Long (University of Georgia); work of Beaumont, first American physiologist, in treatment of digestive disorders (University of Wiccognia). Wisconsin).

A fully equipped hospital is part of the medical exhibit, and will function as a first aid department for Fair

DENTISTRY: The story of the purely American science of dentistry is told in connection with the medical section, by means of historical exhibits. George Washington's false teeth, Paul Revere's dental advertisement, a display of the equipment carried by the itinerant dentist in 1833, and a modern dental operating room.

BRIDGE HALL: In the west wing of the ground floor. Bridge tournaments with prizes, lectures, and exhibitions by experts; displays of ancient and modern playing cards, and other historical exhibits

DANISH AND ITALIAN EXHIBITS Extreme eastern end of north wing, main floor. Replica of the ancient Roman vessel raised from Lake Nemi (Italy); replica of the compass which Oersted used in discovering electromagnetism (Denmark).

GEOLOGY: North wing, main floor, between the foreign exhibits and the mathematics section. Center of intermathematics section. Center of interest in this display is the "Clock of the Ages." Eras of time are indicated instead of hours. Appropriate geological pictures shift with the change in time in the center of the clock face, and are described by a synchronized victrola record. Featured exhibits include methods of mining raw materials and separating minerals from their ores; production of oil and gas their ores; production of oil and gas (American Petroleum Industries); demonstration of determining internal conditions of the earth; explanation of geological processes which have brought about present-day landscapes; representations of Yellowstone Geysers, Grand Canyon, Carlsbad Caverns (National Parks Service)

MATHEMATICS: In the octagonal hall, north wing, main floor, just west of the geology section. Exhibits include accurate surfaces, contributed by C. E. Johansson; Michelson's Har-monic Analyzer, used by Michelson to determine the velocity of light; Galton Quincunx, showing probability curves;

determination of pi (3.1416) explained by a device showing the probability of a rod falling on any one of a group of parallel lines; Sieve of Eratosthenes, utilizing a light beam and photo-electric cell to determine the prime factors of numbers, contributed by Dr D. N. Lehmer; machine for the com-position of simple harmonic motions, including the "heterodyne" curve of radio, contributed by its originator, Professor Theodore Soller of Amherst College; the original instruments used by Marconi, loaned by Italy; 140 years of mathematical development.

Naval exhibits include a display of time service instruments (U. S. Naval chronometers, octants, and sextants; set of radio instruments (Bureau of roscopic compass, periscopes, range finders (Bureau of Navigation, United States Navy).

Sound physics-demonstrations sound waves, the carriers of sound, how sound travels, what pitch is and how it is determined, differences in speech sounds; an enlarged view of the sound track on a moving picture film, illustrating the principle of talk-ing pictures; transmitting of speech sounds on a light beam.

Electricity—principles behind the dynamo, transformer, and electric motor; what an electric current will

Light—explanation and examples of lenses; measurement of light wave length; differences between vibrations of the colors of the spectrum; polarization of light through a sugar solu-tion, resulting in color formation; photoelectric cell; various rays (cathode, canal, alpha, Roentgen, etc.) demonstrated in colorful exhibits, including neon tubes

THE GREAT HALL: Contains exhibits of chemistry, biology, and general science. It joins the arms of the U, forming the connecting link between the north and south wings

In the center of the room are the globes within which Professor Au-guste Picard penetrated the strato-sphere and William Beebe the lower depths of the ocean.

East wall—six pieces of apparatus showing accomplishments of note in the physical and biological sciences; 14 scientific quotations.

Observatory); radio equipment for transmitting time; set of historic Engineering); development of radio communication; application of mathematics to navigation and gunnery, gyroscopic compass, periscopes, range finders (Ruyanu of Navigation Little)

PHYSICS: West of mathematics section, north wing, main floor

Molecular physics-steel balls in motion in an enclosure demonstrating molecular action; glass-cylindered en-gine run by electrical heat; how evaporation can produce icicles; a water film shaped like an umbrella.

do to a magnet.

A Weighty Problem



Frigidaire's ice tray release is demonstrated by Jane Froman, Frigidaire radio star, and Doug Lawrence, sales promotion head of the N. Y. branch.

West wall-Nine groups of scientific achievement.

CHEMISTRY: At the south end of the Great Hall, and along the west wall under the balcony.

South end-Ninety-three chemical elements which go to make up the earth, with their sources and uses, are shown by means of building stones containing them; over this display, the main sources of chemical elements are shown on a revolving globe.

West wall—Exhibits demonstrating the application of chemistry to raw materials. They include: Illustration of the three basic chemical processes -combination, separation, and exchange; chemistry of the human body; processing of petroleum; separation of oxygen from the air; production of coal-tar dyes, medicinals, and plastics; use of electrical power for making steel acetylene.

BIOLOGY: In south wing; one exhibit in the Great Hall.

A mechanical model of a section of basswood twig, 7½ ft. in diameter. By means of plates and canvasses, the twig grows in 75 seconds as much as a real twig would grow in a year. Located in the Great Hall.

Life-sized model of a man, illustrating circulation of the blood and valve action of the heart; mechanical representation of the digestive system; discoveries and applications of heredity; the evidence for evolution; physical content of the discoveries are applications of heredity; the evidence for evolution; physical content of the heart for the state of the stat ology of the human frame.

SCIENTIFIC CRIME DETECTION LABORATORY: Displays of police methods of crime detection, including poison analysis, "black" light, ballist-ics, photography, moulage, "truth serum," finger-printing, radio, etc.

General Exhibits Group

Admission free Architect: Harvey Wiley Corbett.

LOCATION AND DESCRIPTION.
Just south of Hall of Science. Five connected pavilions make up this group. In the first pavilion, the story of the steel and oil industries is told, while the second features the graphic arts. Third, fourth, and fifth sections contain ex hibits of office equipment, jewelry, and clothing, respectively.

Pavilion 1

THINGS TO SEE: Immense mural showing, by models of structures requiring steel construction, the varied uses and development of the steel industry (Inland Steel Co. for United dustry (Inland Steel Co. for United States Steel Corp.); monolithic section of an Illinois coal vein, 8x30x20 ft., containing an exact copy of an underground mine room (Peabody Coal Co.); display of copper, brass, bronze, and copper alloy, as used in utensils, buildings, ships, etc. (Copper & Brass Research Association); sunken illuminated map of an oil field district, showing the distribution of oil to the ultiing the distribution of oil to the ulti-mate consumer (Pure Oil Co.).

Pavilion 2

THINGS TO SEE: Reproduction of John Gutenberg's workshop, with ac-tual presses and equipment from the Gutenberg museum, Mainz-am-Rhein, including a copy of the original Gutenberg Bible, (Cuneo Press, Inc.); a Waite engraving machine imported from England (Dearborn Engraving Co.); modern photographic exhibit (Chicago Camera Club); miniature paintings (Chicago Society of Miniature Painters); "A House of Paper," centering a display of kinds and uses of paper (Paper Foundation).

Pavilion 3

THINGS TO SEE: Wax hands of THINGS TO SEE: Wax hands of famous people illustrating the slogan, "A Pen to Fit Every Hand" (L. E. Waterman Co.); historical locks and safes, contrasted with modern safe-keeping equipment (York Safe & Lock Co.); development of the stencil (A. B. Dick Co.); Grecian temple containing business equipment and the World Clock (International Business Machines Co.); modern office, with dicta-phones in operation (Dictaphone Sales Co.).

Pavilion 4

THINGS TO SEE: Nassak diamond, 78% carats, from the eye of the idol Siva in India; Hotz diamond, from the Hotz collection, formerly in the royal crown of Emperor Maximilian of Mexico; crowns of famous people, including Napoleon, Josephine, Nero, as well as imperial crowns of Austria, Russia, and others—all a part of the lawslers.

Russia, and others—all a part of the Jewelers' Exhibit, Inc.
Other exhibits include a diamond mine, in operation, the "dirt" having been imported from Africa (Diamond Exhibit Co.); reproduction of an observatory and the taking of observatory time, with a large watch 100 times larger than a wrist watch (Elgin National Watch Co.); crystal engraving in process (Clover Leaf Crystal Shops).

Pavilion 5

THINGS TO SEE: Over 400 figurines dressed in costumes of different periods in history (Mrs. Minna Schmidt); diorama demonstrating shirt manufacture and the Sanforizing process; exhibit of rich velvets (Sidney Blumenthal & Co.).

cal the

are nes

owulti-

the

idol

oyal of in-

the

ond

ond obrva-100

lgin

ines ren' MAJESTIC INVITES YOU

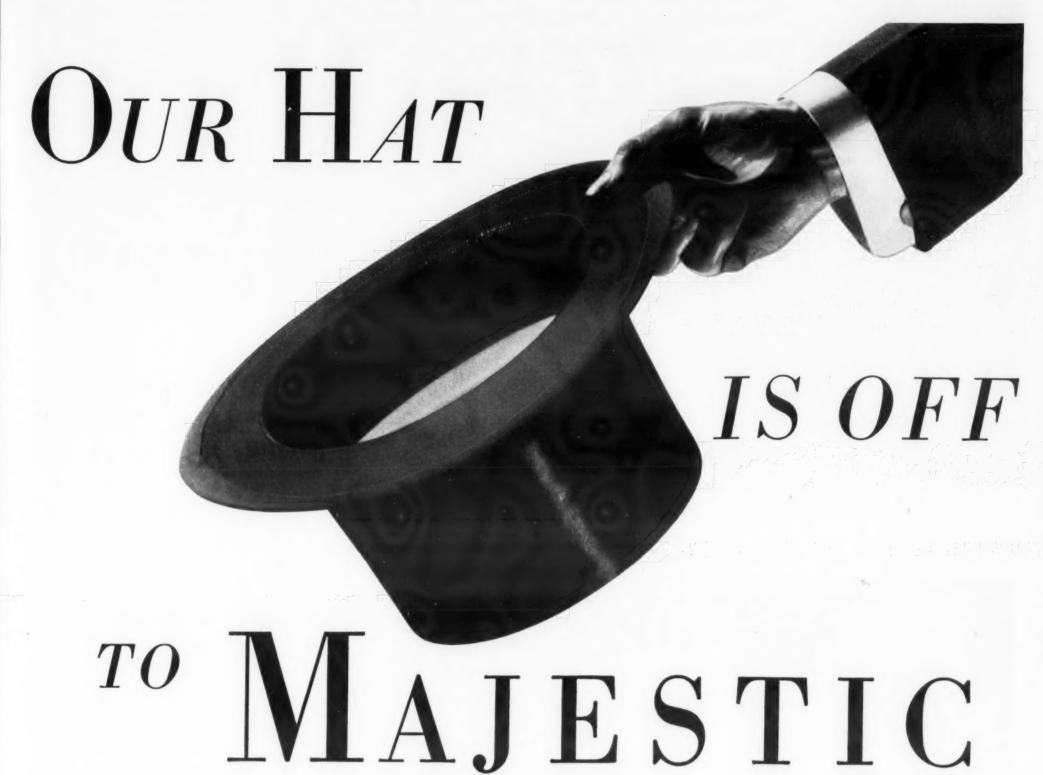
Visitors to A Century of Progress, Chicago, are cordially invited to

make free use of the comforts and

conveniences afforded by Majestic's

Downtown Guest Rooms, at 616 South Michigan Avenue, near the north

entrance to the exposition.



DEALERS AND DISTRIBUTORS

Great work! You, sirs, have been doing your part and more—to make 1933 a year of outstanding progress for Majestic Refrigeration.

Majestic Refrigeration sales for July are already over 300 per cent ahead of the total sizable volume reached in the same month a year ago . . .

It is your recognition of Majestic quality and value that is making this possible. You have seen that you had something unusual to sell. And you are selling it.

You are cashing in on Majestic advertising. You are making good use of Majestic sales helps. You are selling refrigeration instead of refrigerators. . .

So—we've been enjoying a most successful season together. It's far from being over, too. We are going to have more. And Majestic is set for greater achievements to come.

Meanwhile—our hat is off to you, Majestic dealers and distributors!

GRIGSBY-GRUNOW COMPANY, 5801 Dickens Avenue, Chicago

e Majestic

ELECTRO-SEALED REFRIGERATION

FRIGIDAIRE DEALERS TO SET OWN QUOTAS

(Concluded from Page 1, Column 1) for himself will bring him an award of \$4 with an extra 20 cents for every \$25 of business. But if he sets the maximum quota he will receive a \$100 award, plus \$1 for every \$25 worth of business he brings in over and above his quota. Between the high and low quotas there is a sliding scale of quotas there is a sliding scale of awards, and added compensation for all over quota.

"Therefore," explains H. W. Newell, vice president in charge of sales, "the salesman who underestimates himself and then shoots up into a high quota bracket is just out of luck. Here is a contest where the rewards are based entirely on a man's own judgment of himself."

Frigidaire Corp. has put up \$140,000 to cover the awards and added compensation that the drive is expected to put into the hands of its salesmen. In addition, the company is sponsoring a midsummer advertising campaign designed to assist dealers and sales-men during the drive.

Five hundred newspapers are being used, and 58 stations of the Columbia network are carrying the Frigidaire story in two 15-minute programs each Wednesday and Friday evenings from July 14 to Aug. 25. National magazines are also being used.

11 DISTRIBUTORS ATTRACT 8,113 TO SCHOOLS

DETROIT—Home economists of 11 Kelvinator distributorships in the United States held 85 cooking schools during June, drawing a total attendance of 8,113, and resulting in direct sales of 220 Kelvinators, according to factory officials here.

Westinghouse Planning Board



T. A. Buckley, chief draftsman; W. B. Anderson, section engineer, unit section; G. F. Forsthoefel, section engineer, cabinet section; M. Kolischer, section engineer, technical section; and J. H. Ashbaugh, manager of refrigeration engineering, study plans for Westinghouse's new Master Series.

Chicago Tribune to Buy Air Conditioning

CHICAGO-Decision to install airconditioning equipment in the Tribune Tower, large office building on North Michigan Ave. housing the plant of The Chicago Tribune, has just been made by executives of the company. Present plans are to cool all offices in the building. Due to complexities of the proposed installation, engineers are studying available types of equipment.

FRIGIDAIRE CLOSES RETAIL **BRANCH IN DAYTON**

DAYTON—Frigidaire Corp. plans to discontinue July 1 its retail store here, which has been operated, first as a distributor and later as a factory outlet since 1926.

Closing of the store ties in with the company policy of leaving retailing to distributor organizations.

J. A. Russell, who has managed the

store is expected to be transferred to Frigidaire sales promotion department

Refinements Made in 5 Westinghouse Models; Sales Contest Announced

(Concluded from Page 1, Column 1) when a family is away from the home for a week-end or longer. When the control is turned to the "E" position, the refrigerating mechanism will oper-

the refrigerating mechanism will operate at a 25 per cent saving in current cost, Westinghouse engineers declare.

The control also has a defrosting position which permits complete defrosting of the evaporator, yet maintains sufficient cold to keep food fresh and ice cubes solid. Evaporator in the new models is steel finished in white porcelain. It is of the shell type, and has removable aluminum shelves.

porceiain. It is of the shell type, and has removable aluminum shelves.

Cabinets used in the new line are all-steel. Automatic interior floodlighting is a feature of all models except the 4.2-cu ft. lacquer model. The defrosting tray is so designed as to prevent water splashing or sticking of stored ice cubes. Shelves are of the stored ice cubes. Shelves are of the flat ribbon type, and rest on seamless porcelain shelf supports.

Motor Oiling Not Required

Westinghouse engineers claim that neither the motor which drives the hermetically sealed compressor nor the one connected with fan for cool-ing the condenser will ever require

ng the contenser will ever require oiling. Fan on the new models has been speeded up.

Model BL-43, the \$99.50 Westinghouse, has a net storage space of 4.2 cu. ft., and a shelf area of 8.9 sq. ft. Its two ice trays make 44 cubes (4½. lts) at one freezing. In this one lbs.) at one freezing. In this one model, the evaporator is finished in black porcelain instead of white.

BL-45 and BP-45, with exterior finishes of lacquer and porcelain, respectively, are next in the line and are counted as a single model. Their net storage capacity is 4.2 cu. ft., their shelf area, 8.9 sq. ft. Depth of these models is about an inch less than that of BL-43, which has conventional hardware. Their ice capacity is the same as that of the first model.

5.2-Cu. Ft. Models

Next come models BL-55 and BP-55 with exterior finishes as indicated by the letters. Their net capacity is 5.2 cu. ft., their shelf area 10 sq. ft. Seventy-four ice cubes, 7% lbs., are produced by these models at a single

freezing.

Model BL-65, with lacquer exterior and BP-65, finished in porcelain, both have net storage space of 6.2 cu. ft., and a shelf area of 11.6 sq. ft. They produce 118 cubes (121/4 lbs.) at one

Largest of the brand new models are BL-75 and BP-75, with net storage space of 7.5 cu ft. and a shelf area of 13.1 sq. ft. Their ice-making capacity is the same as that of the BL-65

pacity is the same as that of the BL-65 and BP-65 models.

As stated at the beginning of this story, the AP-90, AP-130, and AP-200 models are the same as they were in the line sold up to this week, but are now counted as models of the Master Series. Their respective net capacities are 9 cu. ft., 13.5 cu. ft., and 20.1 cu. ft.

At meetings this week, and through the mails, Westinghouse dealers are learning about the Master Builders sales contest which is being sponsored by the Westinghouse company and its distributors to promote sales of the new line.

The contest will open on July 24 and will continue until midnight of Sept. 16. During the drive, salesmen will attempt to build a "Tower of Progress," every refrigerator sale Progress," every refrigerator sale counting so much toward completion

of the construction job. At the end of the contest, salesmen will receive merchandise prizes on the basis of their success in building one or more

Salesmen of Westinghouse water coolers and commercial refrigeration equipment are also eligible to compete

in the drive, as will all sales supervisors, say Westinghouse officials.
On July 26, two days after the contest has opened, salesmen will receive from the factory a mailing tube containing a blueprint which shows graphically just what methods should be used in building sales during the competition.

Stress Importance of Prospects

With this blueprint will be a sheaf of "specifications" for the salesmen, explaining in detail the procedures shown on the blueprint. It stresses the importance of getting enough prospects, using the company's new sales demonstration manual, evening call-backs, demonstration of the refrigeration, and closing the sale.

A letter from R. C. Cosgrove, manager of the refrigeration division, will urge the salesmen to "follow the plan."

urge the salesmen to "follow the plan." urge the salesmen to "follow the plan." A week or so later, another letter from Mr. Cosgrove will be sent to dealers, with a modernistic booklet which salesmen may show their prospects to illustrate "What's behind the Westinghouse." It will be entitled, "A Half Century of Progress."

August 12 will bring another mailing piece to salesmen—a cardboard auto truck labelled "Master Builders' Tools." When the door of the truck is opened, there appears a paper flap.

is opened, there appears a paper flap, which, when pulled out, shows on a long strip of paper the various tools which Westinghouse salesmen should pe using to build their Tower of Prog-

'Double Effort Week'

To avoid the possibility of a lag in the middle of the contest, Aug. 28 to Sept. 2 will be "Double Effort Week," with distributors sending out letters to all salesmen urging them to "crash through with two for Cosgrove."

As an interest-holding device, sales-men will be given two postcards, one of which they will mail in at the close of the week. One says, "Yes, Mr. Cos-grove, I made my two sales this

The other, headed "Alibi Card," says, "No, I didn't make my two sales . . .,"then leaves space for the salesman to check one of the following reasons for his failure: "Too much rain, car broke down, home team in town, weather too hot, mother-in-law visiting us, had to work around the house, fishing season opened, prospects

on vacation.' In another week, a letter will come from Mr. Cosgrove in which he de-plores the disease "whistle-itis" and kindred maladies. Three days later, salesmen will receive a little booklet illustrating the profit injuries that can

occur by failure to use the proper sales tools, etc.

Eleventh mailing piece used during the campaign will be one which salesmen receive on Sept. 11, containing a men receive on sept. 11, containing a pep talk from Mr. Cosgrove in which he urges each salesman to "be a finisher," and hoist the flag atop the Tower of Progress.

Dealers are being supplied now with window and store display materials, mats for newspaper advertising, and billboard posters—all to publicize the new Westinghouse line during the midsummer sales campaign.





This new and exclusive patented feature is the most sweeping victory in the field of electric refrigerator sales

The Shelvador doesn't need explaining. One glance and the story is told. What a show-room and show-window feature! With the Shelvador you're a mile ahead of competition. You have something every housewife wants in her new electric refrigerator or is sorry she hasn't in her present one.

Increases "Usable" Capacity 50% Increases "Usable" Capacity 50%

Increases "Usable" Capacity 50%

Shelvador actually makes the "small" refrigerator "larger" by increasing the sign since the first leading actually makes the annoyance of "feeling around" for small, hard-to-find only not convenient and helpful that every housewife after one glance will say: "That's schat I must have!" the sign around in the shelvador, the Crosley Electric Refrigerator—famous last year for its trouble-free, service-free operation, has been refined in several points to make it even better. See your nearest Crosley discussed in the shelvador actually makes the "small" in addition to the Shelvador, the Crosley Electric Refrigerator—famous last year for its trouble-free, service-free operation, has been refined in several points to make it even better. See your nearest Crosley discussed in the control of the Shelvador, the Crosley Electric Refrigerator—famous last year for its trouble-free, service-free operation, has been refined in several points to make it even better. See your nearest Crosley discussed in the control of the Shelvador, the Crosley Electric Refrigerator—famous last year for its trouble-free, service-free operation, has been refined in several points to make it even better. See your nearest Crosley discussed in the control of the Shelvador actually makes the "small" in addition to the Shelvador, the Crosley Electric Refrigerator—famous last year for its trouble-free, service-free operation, has been refined in several points to make it tributor or write direct to factory.

Only Crosley Offers It

And remember—only the Crosley Electric Refrigerator can use the Shelvador; for it is an exclusive, patented Crosley feature. Insulation is not sacrificed in the Shelvador-the exterior of the door is extended to permit the use of a standard thickness of insulation.

MODEL D-35 NET contents — 3½ cubic feet. Shelf area— B aquarefeet. Overall Dimensions: Height, 50%; Depth Width, 23%; Depth 24%; Leg Height, 10%; No. ice trays, 2; No. ice cubes, 42.







ALL PRICES INCLUDE DELIVERY.. INSTALLATION.. ONE YEAR FREE SERVICE

Montana, Wyoming, Colorado, New Mezico and west, prices slightly higher. The Crosley Radio Corporation - Cincinnati



Westinghouse Specifications

Westinghouse Electric & Mfg. Co., Refrigeration Department, Mansfield, Ohio BP45 BP55 BP65 BP75BL43 BL45 BL55 BL65 BL75 AP90 AP130 AP300 Master Series CABINET SPECIFICATIONS Height
Width
Depth
nside dimensions of liner (in.) Inside dimensions of liner (in.)
Height
Width
Depth
No. of doors

No. of trays $\frac{2}{N}$ No. of cubes produced $\frac{44}{W}$ Weight of cubes (lbs.) $\frac{41}{2}$ COMPRESSOR SPECIFICATIONS Cabinet finish (exterior)....L models—lacquer; P models—porcelain Cabinet finish (interior).....Porcelain EVAPORATOR
Make of evaporator......Westinghouse
Evaporator construction....Shell
Type of refrigerant control...High side
float Type of ice trays......Anodic aluminum COMPRESSOR
Make of compressor. Westinghouse
Type of system. Hermetic
Type of compressor. Reciprocating

ICE CUBE TRAYS

44 41/2 74 118 118 7% 12% 12% 1740 1740 1740 1740 1740 1725 1725 1725 Compressor drive.......Direct Location of compressor......Above CONDENSUR

Make of condenser. Westinghouse
Method of cooling. Fan
Type of condenser. Finned tube
SPECIAL PEATURES
Interior light on all models but BL43;
knee-touch door latch on all but BL43,
AP90, AP130, and AP200.



THE MOST TIMELY SALES PROMOTION CAMPAIGN EVER CONDUCTED

1933 ??

FINAL JUDGE OF CONTEST CHARLES DANA GIBSON, FAMOUS ARTIST AND CREATOR OF ORIGINAL GIBSON GIRL

With public interest in the Gibson Girl running at its peak, the Gibson Electric Refrigerator Corporation announces a Nation-Wide 1933 Gibson Girl Contest. The stage is already set and we are ready to go—ready to choose the Gibson Girl of 1933 to succeed her popular sister of the "gay nineties".

vo ne wch in wne ts

et in

ect ove ide ise ion rol ion ibe 'an ibe

During the next 60 days the attention of

the entire nation will be focused on the name Gibson and on Gibson dealers and Gibson refrigerators. It's the "break" of a lifetime! Regardless of what refrigerator you are now selling, stock the Gibson line and get in on the Gibson Girl Campaign. It's FREE! Fill out the coupon and mail it at once for complete details, or wire collect

GIBSON ELECTRIC REFRIGERATOR CORPORATION
Greenville—Michigan



MAIL THIS COUPON

•	Gibson Electric Refrigerator Corp. Greenville, Michigan.	
	Please send me complete details regarding Gibso refrigerators and the Gibson Girl Contest Campaig	
	NAME	
	ADDRESS	*
	CITYSTATE	

GIBSON USES FORCED AIR TO COOL BEER

(Concluded from Page 1, Column 1) tor, and the bottles are set on this shelf.

In one corner of the bottle compartment is mounted a small fan around which is placed a duct so arranged that air is drawn up through the evap-orator between the bottles and forced down through the duct to the bottom of the liner.

The fan is wired so that it can be made to run continuously or cycle with the compressor as desired. A small toggle switch is used to change from one circuit to the other.

A ¾-hp. air-cooled compressor, mounted on rubber, is employed to furnish the necessary refrigerating effect. Air to cool the machine is drawn through louvres at one end of the ma-chine compartment and discharged at the opposite end.

The cabinet is insulated with 3-in insulation in the sides and $1\frac{1}{2}$ in. in the top. Hinged lids are on the top of the cabinet.

Sides, front, and back are finished in black lacquer; the lids are covered with polished aluminum; a bottle opener and cap receptacle are attached to the cabinet.

Exterior dimensions of the cabinet are width, 32 in.; depth, 25 in.; height,

WOMEN INVITED TO COOKING SCHOOL BY TELEGRAMS

HOLLAND, Mich.—Jack Knoll of the Knoll Plumbing & Heating Co., local Kelvinator dealer, recently brought out an s.r.o. crowd to his cooking school by wiring invitations

A TOUCH OF THE TOE AND THE DOOR SWINGS OPEN

Search Starts for Gibson Girl Of 1933

(Concluded from Page 1, Column 4)

according to Mr. Marshall.

A committee of local judges will select the best modern Gibson Girl in each community, and she will then be entered in a "zone contest"—the United States being divided into five zones for the competition. Pictures of zones for the competition. Pictures of local winners will be sent to a cer-tain zone committee, which will then select the best Gibson Girl in that

territory.

Each of the five zone winners will Each of the five zone winners will receive \$250 in cash, and from this group will be selected a national winner by a committee of artists at A Century of Progress. She will receive an additional \$1,000, and a free trip to the World's Fair or some American resort for herself and a companion. The contest will close at midnight of

Frigidaire to Install Units in Home

DAYTON-Contracts for installation of a refrigerating system and a water system in the Soldiers' Home here was awarded July 5 to Frigidaire Corp. and E. M. Carnell Co., Columbus, respectively.

ARCH BLACK GOES EAST WITH MELCHIOR FIRM

DETROIT - Arch Black, formerly director of service for Liquid Cooler Corp., has taken charge of service and installation for Melchior, Armstrong, Dessau Co., distributor for Liquid Cooler products throughout the East.

FRIGIDAIRE REPORTS **TERRITORIAL**

(Concluded from Page 1, Column 5) Colorado, Wyoming, New Mexico, Kansas, Nebraska, western Iowa, Missouri, Minnesota, North and South Dakota, southern Illinois, northwestern Wisconsin, Montana, and Idaho had the largest gain in June over June of last year—67.7 per cent in overall business.

Western New York, Ohio, Pennsylvania, Michigan, and Indiana showed an average gain of 58.5 per cent as did the region made up of Texas, western Tennessee, eastern Arkansas, and Oklahoma.

The Pacific Coast region including California, Oregon, Washington, Arizona, Utah, and Nevada registered a 27.1 per cent gain in business last month as compared with the same period in 1932.

Metropolitan Chicago, northern Illi-nois, central and southern Wisconsin, and eastern Iowa reported a 14.3 per cent increase. The South, embodying Georgia, Maryland, District of Columbia, Virginia, West Virginia, North and Sou h Carolina, Florida, Louisiana and Alabama, had a gain of 13 per

The company is launching a national advertising and selling campaign in which 15,000 dealers and salesmen will be active, and more than 500 daily newspapers will participate.

ALABAMA HOME ECONOMISTS VISIT KELVINATOR

DETROIT-Miss Susan Brandon, director of home service for the Alabama Power Co., and Miss Lois Wells of the utility's Montgomery division, visited the Kelvinator factory recently to discuss home service work with Miss Marion F. Sawyer and Polly Peacet of the Kelvin kitchen staff cock of the Kelvin kitchen staff

Stylish



The stylish Briggs steel cabinet is used in the three new Progress models made by Grunow Corp.

GRUNOW ADDS 3 MODELS TO REFRIGERATION LINE

(Concluded from Page 1, Column 3) has a porcelain-finished door over the freezing compartment. The shelves are of the removable flat bar type.

The shell-and-tube evaporator is fabricated of copper and brass, all joints being silver-bronzed. Hardware is of forged brass with a snap latch

is of forged brass with a	snap	INTELL
and semi-concealed hinges.	Com	iplete
specifications of the Progre	ess m	odela
appear on page 6.		
Grunow Corp. 4127 George St., Chicago, Ill. Progress Line		
Model No 50G	60G	70G
CARINET SPECIFICATIONS		
Overall Dimensions (in.)		
Height	25¾ 23¾	$\frac{61}{29\frac{1}{2}}$ $\frac{24\frac{3}{4}}{4}$
Inside dimensions of liner (in.)	
Width 20	29 1/2	321/2
Depth	17	24½ 17
No. of doors 1	1	1
Gross food storage capacity (cu. ft.) 5.2 Net food storage capacity (cu. ft.) 4.5 No. of shelves 4 Total shelf area 9.9	6.2	7.8
Net food storage capacity		
No of shelves	5.0	6.8
Total shelf area 9.9	10.7	14.3
No. of cubes produced. 84 Weight of cubes (lbs.) 6	3	4
Weight of cubes (lbs.) 6	84	112
### THICKNESS OF INSULATION TOP	T (in.	
Top 2½	3	3
Sides 21/2	3	3
Door 3½	31/2	31/2
Compressor canacity	ONS	
(lbs.) I.M.E110	110	110
Compressor capacity (lbs.) I.M.E	1/5	1/5
PRICES Installed in Detroit\$119.50		
Make of cabinet	E	Briggs
Material used for frame		.Steel
Finish of shelves	T	inned
Material used for gasket	p. Ba	ubber
Make of gasket	D	ryden
CABINET MATERIALS Make of cabinet Material used for frame. Finish of shelves Materials used for breaker str Materials used for gasket Make of gasket Make of insulation.	Dry	-Zero
Cabinet finish (exterior) Cabinet finish (interior)		
TOTAL A MARCANA A MINISTRA		
Make of evaporator	Gr	unow
Evaporator constructionSi	nell &	tube
Make of evaporator	High	brass
		T.E.S. P.E.S. L.
Type of ice cube traysAnodi	e alun	inum
COMPRESSOR	0.	
Type of system	onven	tional
Type of compressor4-	vane r	otary
Compressor drive		Direct
Make of compressor. Type of system		Below
REPORT OF A NOTE		
Refrigerant used	Ca	rrene
Refrigerant used		3.18
CONDENSER		
Make of condenser	M	cCord
Method of cooling	Dimer -	. Fan
HARDWARE	inned	tube
Make of hardwareNa	tional	Lock
Make of hardwareNa Process of manufacture		. Cast

POLICY
Guarantee on cabinet. 1 year
Guarantee on system 1 year
Serviced by Dealer

Electric Power Sales Increase July 8

NEW YORK CITY—During the week ending July 8, electric utility companies in the United States made the largest gain in electrical power output for any week since early May.

PORCELAIN INSTITUTE PLANS GOVT. CODE

CHICAGO-A resolution calling for the sponsorship by the Porcelain Enamel Institute of a National Recovery Coordinating Committee for the porcelain enamel, metal stamping, and allied industries was adopted at the third annual meeting of the institute which closed here June 28. The committee is to meet for the pur-The committee is to meet for the purpose of determining the steps to be taken by all users of porcelain enamel under the provisions of the National Industrial Recovery Act.
Rudoif W. Staud of the Benjamin Electric Mfg. Co., Chicago, was reelected president of the institute. The

other officers elected are: Earle S. Smith, Toledo Porcelain Enamel Products Co., Toledo, and F. E. Hodek, Jr., General Porcelain Enameling & Mfg. Co., Chicago, vice presidents; William Hogenson, Chicago Vitreous Enamel Product Co., was re-elected treasurer for a third term; and George P. Mac-Knight was re-elected secretary.

Members of the institute's executive committee for the coming year include the officers and Bennett Chapple, American Rolling Mill Co.; Louis Ingram, Ingram-Richardson Mfg. Co.; E. H. Weil, Vitreous Steel Products Co.; George S. Blome, Baltimore Enamel & Novelty Co.; R. A. Weaver, Ferro Enamel Corp.; W. R. Greer, Porcelain Enamel & Mfg. Co.; and A. J. Kieckhefer, National Enameling & Stamping Co.

Stamping Co.
More than 100 leaders of the enameling Industry from all sections of the country were present.

LOCAL BUREAU MEETINGS ATTRACT LARGE CROWDS

NEW YORK CITY-Large attendance at refrigeration meetings held in all parts of the country by Electric Refrigeration Bureau has been registered in the past two and a half

Following record-breaking gatherings at Boston, Elmira, Binghamton, and other cities, the field representatives of the bureau counted an attendance of 550 at Easton, Pa.; 700 at Reading; 200 at Lebanon; and 117 and 97, respectively, at 8 a. m. meetings in the cities of Ithaca and Oneonta, N. Y.

Other big meetings were held in May in Hanover (Pa.), Walton, Norwich, Liberty, Jamestown, Watertown, and Potsdam (N. Y.); St. Louis, Kanand Potsdam (N. Y.); St. Louis, Kansas City, Pittsburgh, Oklahoma City, Shawnee, Muskogee, and Richmond, (Va.). The June schedule included sessions in Newport News and Norfolk, Va.; East Orange, N. J.; Buffalo, St. Louis, St. Paul, Minneapolis, St. Cloud (Minn.); Eau Claire, LaCrosse, Monroe, and Lake General (Wisc.) Monroe, and Lake Geneva (Wis.). On July 10, refrigeration was one

of the main topics of discussion at a meeting of the Delmarva Electric Association, embracing the states of Delaware, Maryland, and Virginia, at Ocean City, Md.

Woman Hurries to Cool Place to Faint

CHICAGO-The effectiveness of air conditioning in attracting customers was demonstrated in the Kelvinator exhibit at A Century of Progress here recently.

Into Kelvinator Row hurried a woman who walked about unsteadily for a few seconds, then collapsed in a dead faint at the feet of John Garceau from the factory sales promotion department.

In the reception room a few moments later, the woman was revived. Her first words were, "Well, I made

When Mr. Garceau asked what she meant, she replied, "I knew I was going to faint when I was down the hall way, so I hurried up here where I knew it was nice and cool and the floor was soft."

New Dealer Sells 35 Units in Small Town

ROCK RAPIDS, Iowa-The Florian Battery & Radio Co., Kelvinator dealer here, has sold 35 units in this town of 2,221 population since it obtained its franchise in January.

The dealer, Mr. Florian, was for-

merly a Kelvinator service man. He made the down payment for the floor stock through the sale of his own electric refrigerator.

When he opened his shop, there were only five electric refrigerators in Rock Rapids.

in Rock Rapids.

100 KELVINATORS IN TOWN OF 650 PEOPLE

EARLVILLE, N. Y .- On June 13, Raymond O. Starkwether, Kelvinator dealer here, closed a refrigerator sale which brought to 100 the number of Kelvinators he has sold since 1925 in this town of 850 people.



and dealers are carrying the

for details.

LEONARD REFRIGERATOR COMPANY 14256 Plymouth Road, Detroit

GIBSON WILL HONOR DEALERS AT CAMP

GREENVILLE, Mich.—Crack dealers of the Gibson Electric Refrigerator Corp. will become men of the great outdoors for three days at the close of a midsummer sales contest which is now in progress.

All Gibson dealers making outstanding sales performances between now and early September will be brought to Greenville on Sept. 10 for a stay at Camp Gibson, a tented town on the shores of Lake Baldwin, near the city. Following the camp, the dealers will be given a trip to A Century of

Final plans for the camp were made at a meeting of Gibson officials at the factory in Greenville last week. The following were present:

C. J. Gibson, president; F. S. Gibson, Jr., vice president; F. A. Delano, assistant to the vice president; H. E. Young, eastern division manager; E. H. McCarthy, midwest division manager; C. H. Badger, comptroller; and W. R. Marshall, director of advertising and sales promotion. Mr. Delano will be in direct charge of the campaign.

\$502,816 WORTH OF UNITS SOLD BY GEORGIA POWER

ATLANTA, Ga.—A total of \$502,816 in electric refrigerator sales was the record made by the six divisions of the Georgia Power Co. in their household refrigeration sales campaign which opened May 4 and ended July 1. Together, the divisions' percentage of quota sold during the drive was 201.1.

The Augusta division of the utility ranked first in the campaign, with 319.7 per cent of its quota sold at the close. Its sales totalled \$81,833. Second was the Rome division with \$56,935 in sales, giving it 253 per cent of its quota. The Macon division made \$103,412 in sales, or 251.8 per cent of quota, to give it third place.

With 224.7 per cent of quota sold, equal to \$82,293 in sales, the Columbus division took fourth place in the interdivision contest. Sales of \$48,988 worth of refrigerators gave the Athens division 202.4 per cent of quota and fifth place in the list.

The Atlanta division, despite the fact that it had the largest dollar volume of sales during the campaign, came in last in percentage of quota. Its sales totalled \$129,355, its percentage of quota, 129.4.

COMMERCIAL SALES OF SERVEL UP 70% IN MAY

EVANSVILLE, Ind. — Orders for Servel commercial units in June exceeded those of May by 70 per cent, breaking all records for 30-day periods in the history of the company, according to F. E. Sellman, vice president of Servel Sales, Inc., here. Mr. Sellman estimated the increase in dollar volume as 80 per cent.

ume as 80 per cent.

"A substantial portion of our gain in commercial business has come from the new Servel humi-draft unit for both air-circulating and walk-in coolers for stores and restaurants," says Mr. Sellman.

June also brought a sharp increase in orders for the new Servel draft beer bar, according to the vice president

Cookery Council to Be Formed in Michigan

DETROIT—Under the direction of Syd Caswell, president of Caswell, Inc., Michigan G-E distributor, steps are being taken here to organize an Electric Cookery Council for eastern Michigan

Michigan representatives of prominent electric range manufacturers met in Detroit with Mr. Caswell several days ago to discuss plans for formation of the council, and the G-E distributor, as chairman, appointed an executive committee composed of one representative from each leading

range manufacturing company.

Next step, says Mr. Caswell, will be appointment of a planning committee, then will be held a mass meeting of all eastern Michigan dealers and distributors who handle electric ranges. At this meeting, range retailers will be made members of the council, if they desire, and sales promotional activities of the organization will then be launched.

ICE CUBE SHORTAGE SO WRITER BUYS UNIT

LOS ANGELES—Max Miller, San Diego newspaper reporter who wrote "I Cover the Waterfront," and struck it rich, found that the supply of ice cubes in his La Jolla (Calif.) bungalow refrigerator was insufficient for the dozens of friends who began dropping in to wish him well, so he called J. S. Johnson, Frigidaire dealer in La Jolla, and bought a deluxe model Frigidaire.



Your Refrigerator Can be Put on a Pedestal

Manufacturers of electric refrigerators are behind with orders. That means sales are coming easier, faster for the moment. But no dealer will have trouble recalling that it has not always been so. It is easy to remember the weeks and months when the order book looked pretty slim.

Nor will any dealer feel any better about his service calls. His jobs still have to stand up. And increased sales of faulty jobs means merely more and costlier service work.

There is a way to avoid much trouble and grief with refrigerators in customers' kitchens. That is to see that they are insulated with Dry-Zero.

Dry-Zero insulation in a refrigerator immediately puts it on a superior basis compared with any other refrigerator with any other kind of insulation. It is not only easier to sell, it avoids much of the trouble from excessive running time and high current consumption.

The use of Dry-Zero will improve any refrigerator built today at least 15% in permanent performance. And the world-famous Dry-Zero Laboratory is open for you to conduct your own tests, if you care to, should this statement be questioned.

Put your refrigerator on a pedestal by assuring lifetime efficiency and low operating cost with Dry-Zero insulation. Dry-Zero Corporation, Merchandise Mart, Chicago, Illinois. Canadian Office: 687 Broadview Avenue, Toronto.

THE MOST EFFICIENT DRY-ZERO

ELECTRIC REFRIGERATION NEWS

The Newspaper of the Industry Published Every Week by

BUSINESS NEWS PUBLISHING CO. Also publishers of Refrigerated Food News (monthly) and REFRIGERATION DIRECTORY and MARKET DATA BOOK (annual) 550 Maccabees Building, Woodward Ave. and Putnam St. Detroit, Michigan. Telephones: Columbia 4242-4243-4244-4245

Subscription Rates: U. S. and Possessions and countries in Pan-American Postal Union: \$3.00 per year; 2 years for \$5.00 Canada: \$6.00 per year (U. S. Money) All Other Countries: \$5.00 per year Advertising Rates on Request

> F. M. COCKRELL, Publisher George F. Taubeneck, Editor John T. Schaffer, Engineering Editor Phil B. Redeker, Assistant Editor ELSTON D. HERRON, Staff Writer

HOWARD W. MATEER, Advertising Manager George N. Congdon, Business Manager John R. Adams, Production Manager

Member, Audit Bureau of Circulations Member, Associated Business Papers Copyright, 1933, by Business News Publishing Co.

Vol. 9, No. 12, Serial No. 226, July 19, 1933

EDITORIAL AIMS

To encourage the development of the art.

To promote ethical practices in the business.

To foster friendly relations throughout the industry.

To provide a clearing house for new methods and

To broadcast the technical, commercial and personal news of the field.

Pride of Ownership

WHAT is selling electric refrigerators to-day? Why are people continuing to invest in electric refrigeration right through the summer? Why are factories still running overtime, and orders piling up mountainously?

Is it styled cabinets—the feature of most 1933 lines—which is the bait for customers? Are refrigerating machines recognized as so much better and more efficient than ever before? Is it the price level which is proving so attractive? Are sales presentations more effective, and is sales promotion more thorough and more clever?

Executives would give plenty to know the answer to these questions. The truth of the matter seems to be that electric refrigerators are selling today, and nobody knows exactly why. Business has not only been good, it has been better than anybody dared hope. The season has definitely been a surprise.

All Old Arguments Work

If executives could put their finger on the cause, if they could find out just why people want their products today, they could proceed more intelligently to plan their 1934 campaigns. They would know whether or not to lay more emphasis on style, whether to maintain present price schedules or fall into line and raise the figures marked on the tags. They would know what lines to follow in working out promotion material, what vulnerable spots in a prospect's defense they might attack.

But little has been contributed to the science of merchandising electric refrigerators this year. Few new schemes, or stunts, or ideas have appeared. And of the old arguments-convenience, economy, health protection, and their tribenone seems to be working any better than the others. Almost any sales story seems to be successful if told well and persistently by the

Pride of Ownership Influence

What the industry is beginning to suspect is that Pride of Ownership, which has in the past perhaps influenced more prospects to sign on the dotted line than any other single motive, is again the big inducement.

Both automobiles and refrigerators are enjoying highly successful seasons, seasons which are being extended considerably beyond their normal limits. It is entirely possible that the badge of honor and position and attainment which goes with possession of one of these products is the factor which is actuating their sale. People have been long wanting an electric refrigerator and

a new car, and they are now deciding to buy them while the buying is good.

Problem in English Market

Indication that Pride of Ownership is a fundamental reason for the purchase of an electric refrigerator-a reason of which all other arguments and selling points may be simply justifications-was brought home to editors of the NEWS last week by conversation with B. Mittel of Hayes, Middlesex, England. Mr. Mittel is identified with Electric & Musical Industries, Inc., and is also a director of Marconiphone Co., Ltd. These prominent manufacturers of radios and phonographs are now considering the manufacture and sale of electric refrigerators. Mr. Mittel is in America gathering information on the subject.

"What," Mr. Mittel wanted to know, "will an electric refrigerator do? What stunts can you demonstrate with one?"

Well, it will make ice cubes and frozen desserts. It's really too bad, but an electric refrigerator can't be demonstrated like a vacuum cleaner or laundry equipment.

"Why," he continued, "should anyone buy a refrigerator? In England the use of ice isn't prevalent. People don't accept refrigeration as a necessity. If food spoils, they throw it awaybut not until it becomes rancid. Your bacterial count stories won't work, because fear won't work as a sales argument in England. Halitosis, B. O., and all these fear arguments which work so well with you Americans either make him laugh or make him angry. English people have lived for centuries without refrigeration, and they will refuse to believe that they can't go on living without it. The argument must be something positive."

Pride, he went on to point out, is strong in an Englishman. He likes his home, and today he likes to be thought modern—even though he does revere the old. Hence Pride of Ownership must be the theme which an English manufacturer of refrigerators must play upon, Mr. Mittel feels. Not having had ice refrigeration, the convenience and economy stories will not be so effective. Health protection is a "fear" argument, according to his definition. The joy of possession, then, is the one basic argument left.

People Want Refrigerators

There seems to be no question that in America the idea of electric refrigeration is accepted and embraced by the general public. Salesmen ringing doorbells run into very few people who will actually declare that they aren't interested in the prospect of having an electric refrigerator in their home.

And-if people want electric refrigerationthe chief task of the salesman becomes that of showing them how they can own one. With the general improvement in business, with the advent of higher wages and increased employment, this task should become progressively easier.

WHAT OTHERS SAY

DEVELOP AN INDUSTRY CODE

code for the electrical industry under NIRA ld seek to rectify major maladjustments. electrical industry these are in distribution, and any code developed should be made jointly by manufacturers, whole salers, and retailers after full and complete discussion To rectify conditions it will be necessary to state the channels of sale for each product, the margins, the prices, and the field of activity for manufacturer, wholesaler, and retailer. Statistics of stocks and of sales by each agency are just as essential as statistics of production.

Any plan developed by manufacturers alone will accom plish little unless full consideration is given to the chaotic distribution problem. After all, price cutting and bad business practices occur by reason of efforts to take short cuts or to avoid intermediaries in an attempt to get goods to consumers. It is direct selling, by-passing of wholesalers and retailers, and lack of knowledge of costs of selling that create chaos in the electrical industry. It is the lack of application of principles of selective marketing and multiple selling that creates waste and bad business

Thus NIRA offers an opportunity to force manufacturer, wholesaler, and retailer to behave and to become wise. And if the ablest leaders of each group will get together and develop a code that will do this they will have made a valuable contribution to the industry. A selfish and incomplete code developed and presented by each group alone should not go to Washington. If time is not available for a joint code, at least provision should be made to correlate the codes and to set up a definite joint agency to do this.—Electrical World, July 15, 1933.

LETTERS

Conference Comments

Erie Art Metal Co., Inc. Erie, Pa.

July 10, 1933. The writer wishes to take this opportunity to congratulate you person

ally, and the News generally, for the splendid reception given to the visitors at the refrigeration industry conference held last week. The News is to be congratulated on

the splendid manner in which the guests to this conference were entertained, and the event will long remain outstanding in the memories of those attending the conference.
A. F. SCHABACKER.

The Bush Mfg. Co. Hartford, Conn.

July 12, 1933. I wish to extend my deepest appreciation for the hospitality which you showed Mr. Bappler and myself when we were in Detroit last Thursday.

I think that the meetings were a great benefit to all of us and that Business News Publishing Co. did an excellent job in paving the way for us. J. W. HATCH,

Stewart-Warner Corp. 1826-1852 Diversey Parkway, Chicago

July 13, 1933. Please pardon this tardy evidence of my appreciation of the service you rendered to the members of the refrigeration industry during the recent meeting in Detroit.

I was quite impressed by the "snap' of your organization.

Chas. R. D'OLIVE,

Refrigeration sales manager.

Ottenhelmer Bros., Inc. Baltimore, Md.

July 10, 1933. We received your letter of June 30, but it was impossible for Mr. R. E. Ottenheimer to be present at the meeting inasmuch as he was out of

the city on another important matter.
We certainly will appreciate your
passing on to us any information whatever that may have developed out of the meeting.

W. T. HORMES.

Electro Devices Co. 537 East Delavan Ave., Buffalo July 17, 1933. I appreciate your response of July

to me at the Detroit Athletic Club. attended the general meeting but in the confusion of your hospitable breaking up of the meeting, I was not able to find you before I had to join Mrs. Cornell.

congratulate you upon thoroughness of your efforts in helping the industry of which you are so useful a factor. While I do not anticipate what our decision may be, it does seem that Nema is an open channel for early definite action under the National Industrial Recovery Act. Developments in the basic industry like steel, the past few days, certainly indicate action.

F. A. CORNELL,

Suggestions for Industrial Recovery

The Apex Electrical Mfg. Co. Cleveland

July 5, 1933. Editor:

This will answer Mr. Cockrell's letter of June 29, and confirms my telegram of today, in regard to the meeting of the Refrigeration Division at Detroit.

As stated in my wire, unfortunately this falls on the date which is the opening of our national sales convention, making it impossible for any one in an official capacity of our organization to attend.

You are advised, however, that we re very much interested in this very matter and the writer is serving on the committee of both the vacuum cleaner group and the washing ma-chine group, where tentative codes chine group, where tentative codes have been prepared and certain preliminary work is being carried on to coordinate with the governmental ac-

The question arises as to whether the manufacturers of household items, such as mentioned above, should be included in the National Electrical Manufacturers Association, or whether these items that might be called household equipment might not be of sufficient importance to be grouped as such and be dealt with direct by the administration. It is the writer's understanding that the administration is open minded on this subject and it is quite possible that a group of this type of equipment could be worked better as a separate group, than in an unrelated classification.

Perhaps refrigeration is a suffi-ciently important item to be dealt with independent of others. One advantage of dealing through Nema might accrue to the manufacturer who is making a number of different types of products, and we happed to be one of them, that

is, we manufacture vacuum cleaners, washing machines, ironing machines, and refrigerators, etc. On the other hand, it seems a great deal more logi-cal to have a household equipment division where the specific problems could best be dealt with.

We will be very glad to receive any information as to the results of this meeting which you are holding, and will certainly tie in with anything that is accepted by the majority for the

C. G. FRANTZ,

Service Men's Organization

Baker's Electric & Refrigeration Shop Audubon, Iowa

July 10, 1933. ELECTRIC REFRIGERATION NEWS:
It just seems to me that this is a

good time for the independent refrig-erator servicemen to hang together in an effort toward bettering present conditions in the service organization.

It is almost impossible for the independent service men to obtain the necessary information that enables them to render intelligent service on some makes of machines. An organ-ization of this kind could supply information on most anything wanted by the service men.

It seems to me a plan can be worked out for the benefit of the service man that will be of great help in rendering better service to all owners and thus

create a better understanding between user and dealer.

I would like to promote something

along this line, and I would like to ask every independent service man and manufacturer that is interested to communicate with me. A small monthly magazine devoted to service operations and descriptions of new apparatus is planned as the official organ unless some present publication would accept the subscriptions and run the material as furnished to them.
All you fellows who are in this great industry, and want to better your service set-up, write me.

CHARLIE BAKER, Audubon, Iowa.

Business Note

New England Distributing Co. Boston

June 15, 1933.

We have been subscribers to your paper for quite a long while. We noticed in reading the May 31 edition that the Sparton distributor in Staunter Ver. ton, Va., had done an outstanding job.

We are the distributor for Sparton radios and refrigerators in the states of Maine, New Hampshire, and Massa-chusetts, and notwithstanding the bank holiday and general upset condi-tion of the country, we have increased our refrigeration business this year 300 per cent over the entire 12 months of last year; and before the year is out we should at least double that figure. We have increased the dealer organization considerably and have trained them on merchandising Sparton refrigerators; and we are in a position to compete with the best in the field.

E. C. BONIA, Vice president.

BOOKS

"THE ENGINEER'S MANUAL OF ENGLISH"

Authors: W. O. Sypherd, Sharon Brown. Publisher: Scott, Foresman & Co., Chicago. Publication date: 1933. Pages: 526. Price: \$2. THE engineer who goes seriously about the business of reading this compact little book should find, when he has finished its 500-odd pages, that it has become a far simpler task for him to put into black and white the

of any technical writing. This is one book that doesn't get away from its title—The Engineer's Manual of English—for from its first few chapters of discussion on ordinary rhetoric to the last pages of model technical compositions, the text gives its instruction in the language and style which real engineers find easiest

ideas and facts that must form a part

to understand. Nor is the book spotted here and there with information for which an engineer would have no use. It settles down in the first page to discussion of engineering English, and omits every-thing the value of which to the engi-

neer might be questioned.

The manual's information on the writing of business letters, reports. specifications, technical articles, etc.. is completely explained and illustrated.

And lest the reader fail to under-stand fully the book's explanation of some phase of technical writing, there has been placed in the second section a representative collection of specimens of engineering writing—reports, editorials, book reviews, technical articles, bulletins, booklets, catalogs, and specifications. These specimens will enable the engineer to see as well as read about the things discussed.

FRIGIDAIRE FACTORY **EXECUTIVES RETURN** CONVENTIONS

DAYTON-Eight convention parties of Frigidaire factory executives and staff members returned home Saturday after contacting 15,000 dealers supervisors, and salesmen in 54 cities during the last nine days.

The conventions were held for the presentation of midseason selling and advertising plans for household, air conditioning, and commercial divisions

to the national organization.

H. W. Newell, vice president in charge of sales, reported the entire selling force has confidence that unheard of sales volumes will be rolled up in the next six weeks as a result of the way refrigerator buying increased in March, April, May, and

Each crew was composed of an advance man and four others chosen chiefly from the ranks of regional household contact representatives and regional commercial sales engineers.

The crew leaders were Frank R. Pierce, sales manager; Lee A. Clark, Pierce, sales manager; Lee A. Clark, sales promotion manager; H. D. Wehrly, manager, North Central region; H. J. Walker, Jr., manager, public utilities division; T. A. Farrell, manager, Southeastern region; R. D. Van Dyke, manager, Southwestern region; L. A. Curl, manager, Western region; and R. G. Hutchison, manager, Pacific region.

The group headed by Mr. Pierce

Pacific region.

The group headed by Mr. Pierce made the eastern swing. It consisted of W. D. McElhinny, manager of the commercial division; J. C. Chambers, manager of the air-conditioning division; C. J. Allen, eastern regional household division representative; and R. H. Huston of the sales promotion department. This party visited Phila-delphia, New York City, Boston, Al-

bany, and Pittsburgh.

H. J. Walker's party convened at
Youngstown, Cleveland, Buffalo, Detroit, Jackson, and Indianapolis. His associates are A. J. Freiman, regional commercial sales engineer; Frank C. Lyons, in charge of air-conditioning education; Ellsworth Gilbert, regional household division representative; and

W. J. Brown, public utilities division.
Hugh D. Wehrly's crew was made up of R. L. Winegarner, regional house hold division representative; J. P Breen, sales promotion department; V. Hetzel, regional commercial sales engineer; and E. G. South, north central regional staff. These men conducted meetings in Milwaukee, Chicago, Green Bay, Madison, Davenport, Peoria, and Decatur.

The wheat and corn belts swing was taken by a crew headed by L. A. Curl, who has with him Fred Beecher, Curl, who has with him Fred Beecher, regional household division representative; C. E. Quigley, manager, beer cooling division; Frank J. Cotton, public utilities division; and W. C. Yates, regional commercial sales engineer. The cities visited by this group were Minneapolis, St. Paul, Sioux City, Omaha, Des Moines, Kansas City, Joplin, Wichita, and Denver.

The seaboard area received calls from T. A. Farrell; J. F. Cain, regional household representative; R. B. Ambrose, retail commercial sales manager; D. H. Theobald, sales promotion department; and W. H. Mendham, southeastern regional staff. This group supervised the convention program in

supervised the convention program in Baltimore, Norfolk, Roanoke, Atlanta, Jacksonville, Tampa, and Miami.

R. D. Van Dyke's party was made up of D. T. Hayward, regional household representative; Earl Powell, regional commercial sales engineer; B. J. Lucey, air-conditioning division; and Leo Hanlein, department store division. It visited Houston, San Antonio, Fort Worth, Oklahoma City, Muskogee, and Memphis.

Memphis.

Lee A. Clark's group stopped at
Chattanooga, Birmingham, New Orleans, and St. Louis. This group, made
up of R. W. Pocock, public utilities Joseph Thiele sales tion department; W. F. Switzer, sales promotion department; and Cary Gamble, regional commercial sales engineer, also held the meeting for the

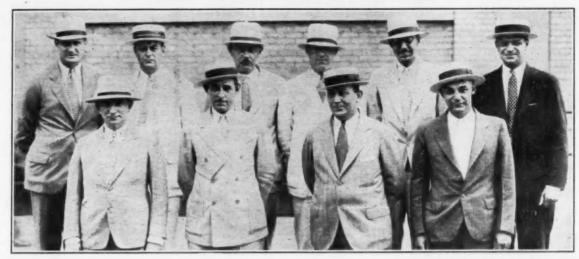
Dayton district organization.

The Pacific coast swing under the direction of R. G. Hutchison included Los Angeles, San Francisco, Portland, Seattle, Spokane, and Salt Lake City. Members of this crew were George Shane, regional household sales manager; Elmer J. Riley, regional commercial sales manager; and A. J. Harrison, regional advertising and publicity representative.

Rehearsal Broadcast Carried to Boston

NEW YORK CITY—When dress rehearsal for the first of Frigidaire's coast-to-coast broadcasts was staged on July 13, it was a strange network of wires that carried the voice of Jane

Back from the Battle Lines



Frigidaire's heavy sales artillery has returned to Dayton after telling 15,000 dealers and salesmen about midsummer sales plans. Left to right, back row, H. W. Newell, vice president in charge of sales; R. D. Van-Dyke, southwestern regional manager; Hugh D. Wehrly, north central regional manager; T. A. Farrell, southeastern regional manager; L. A. Clark, sales promotion manager; H. J. Walker, Jr., manager public utilities division. Front row, W. D. McElhinny, manager commercial division; J. C. Chambers, manager air-conditioning division; Frank R. Pierce, sales manager; and L. A. Curl, manager western region.

mixing the sound as it sped into the

amplifying rooms.

At Cincinnati, in an audition room at station WKRC were H. W. Newell, vice president, and Earl D. Doty, advertising manager of Frigidaire Corp.; B. B. Geyer, president, and H. P. Vieth, vice president of the Geyer Co., Frigidaire's advertising agency.

Assembled in a Boston hotel ball-porn were more than 100 New Earl

room were more than 1,000 New Eng-land Frigidaire salesmen in convention. Frank R. Pierce, sales manager, J. C. Chambers, air-conditioning divi-sion manager, W. D. McElhinny, commercial division manager, and John S. Pfeil, district manager, were with

them.

Promptly at 2:15:30, the switches were cut in, Director Renard lifted his baton and the four Snow Queens launched into the "Dance of the Icc Cubes." Then Miss Froman stepped to a second mike, was introduced by to a second mike, was introduced by Dean and sang "Hold Me."

It was the broadcast program in its

entirety, but not a single radio wave went into the ether with it.

The program was "piped" to WKRC at Cincinnati and to Boston where it was put into loudspeakers so the Frigidaire men could hear and approve it before nation-wide broadcasts was been on Talk it was put into loudspeakers. were begun. On July 14, it went out over 58 CBS stations without a

New Frigid Airman

NEW YORK CITY-Jane Froman star of the new Frigidaire coast-to-coast radio hour, was initiated into coast radio hour, was initiated into membership in the Frigid Airmen's Club on June 15 by J. C. Chambers, manager of the company's air-conditioning division; J. W. Mersfelder, manager of the New York air-conditioning division; and Douglas R. Lawrence, sales promotion manager, New York City.

Miss Froman was presented with a pair of gold wings, the symbol of A-1-A members in the national organ-ization made up of Frigidaire airconditioning salesmen.

Sunset Electric Co. Will Distribute Frigidaires

DAYTON-Sunset Electric Co. of Seattle and Portland, Ore., has been appointed Frigidaire distributor for that section, according to H. W. Newell, vice president in charge of

Frigidaire business in Seattle will be under the direction of A. L. Shellworth, sales manager, while George L. Sammis, manager of the Portland office, will be in charge in Oregon.

SALES MEETING VISITORS SOLD BY PEP TALK

STEUBENVILLE, Ohio—Salesmen of the Robinson Music Co., Kelvinator dealer here, sold several refrigerators by accident one night recently.

Manager of the store neglected to turn out the lights in the display window while a sales meeting was under way inside. During the meeting, a number of people strolled in the store, attracted by the lights. They were given chairs, and remained throughout the entire meeting.

After the session, several of the

After the session, several of the visitors placed orders for Kelvinators, the store management reports.

LEONARDS STORE FOOD FOR WALKATHON ENTRANTS

Froman, the music of Jacques Renard's orchestra, and the plugs of "Uncle" Louis Dean, the announcer. In an air-conditioned studio on Madison Ave. in New York City were the stars, facing a glass enclosed control room in which engineers were ATLANTIC CITY — Two deluxe Leonard electric refrigerators are being used on the Million Dollar Pier here to store food for the contestants in the "Walkathon," which started July 1 to last for about three months.

COMMERCIAL FORCE OPENS SALES DRIVE

CHICAGO — Fifty-five commercial salesmen of R. Cooper Jr., Inc., Chicago General Electric distributor, met at the Bismarck hotel on July 6 for a breakfast which marked the opening of a special drive by the distributorship for commercial business.

The local campaign is in the form of a "baseball contest" among the commercial salesmen, and coincides with a national commercial sales drive be-

a national commercial sales drive bea national commercial sales drive being sponsored by the General Electric Co., according to S. Nides, sales promotion manager of the Chicago distributorship.

tributorship.

In charge of the contest is L. C.
Kohlman, the distributor's vice president in charge of commercial sales.
Besides Messrs. Kohlman and Nides, speakers at the breakfast meeting were Mr. Cooper and T. Millott, P. Hunker, and C. J. Bassler, all of the distributing organization.
On July 10, most of the salesmen in

Cooper's commercial department went to Fort Wayne, Ind., to visit the commercial division of the General Elec-tric Co. factory there, and confer with officials of the manufacturer's com-

mercial department.

After the factory tour, the visiting salesmen were addressed by Walter Landmesser of Cleveland, General Electric Co.'s commercial manager; C. Lichtenberg, chief engineer of the Fort Wayne works; Clark Orr, Messrs. Bruggeman and Hurpette of the General Electric Co.; and Mr. Kohlman.

FOREIGN CUSTOMER

CHICAGO-Marco Nadler of Alexandria, Egypt, visited the Frigidaire exhibit at A Century of Progress recently, and was sold a household model by F. Tinnerman, salesman at the display.

CROSLEY DEALERS NAMED BY ANCHOR APPLIANCE

PITTSBURGH—Crosley refrigerator dealers signed up by Anchor Lite Appliance Co. are as follows:

Kaufmann's Department Store, Rosenbaum Co., May-Stern & Co., Rosenbaum Co., May-Stern & Co., Spear & Co., Eichenlaub's (Butler St.), Eichenlaub's (Federal St.), Gleason Motor Co., Brentwood Hardware Co., and Brentwood Electric Co., Pittsburgh. Hershberg Furniture Co. and Wampington; Bennett Drug Co., Bridgeville; Aaronson Furniture, McKees Rocks. Gately & Fitzgerald, Johnstown; Peoples Electric Service, Windber; Hahoning Hardware, Punxsutawney.

Mahoning Supply Co. (20 stores); Hempfield Supply Co., Greensburg; Frank Levin Furniture Co., Jeannette; Hershey Department Store, Irwin; Phillips Hardware Co., Falls Creek; Buchheit Bros., Indiana; M. Marra-cinni Co., Elizabeth and Clairton.

lers, McKeesport; Hershberg Furni-ture Co., Braddock; Volkwein's, Oak-mont; Klein Furniture Co., New Kens-

A FACT THAT 10 YEARS IN THE REFRIG-ERATION INDUSTRY HAS TAUGHT US

The "LONG HAUL" Basis

Constructive planning views current problems in the light of tomorrow as well as of today. A problem solved with today in mind only, often results in future problems even more serious. We try to shape our policies according to the "long haul" basis—and are content with a slower growth so long as that growth is sound.

COOLER CORPORATION UNIVERSAL DETROIT, MICHIGAN BRANTFORD, ONTARIO

MANUFACTURERS OF A COMPLETE LINE OF HOUSEHOLD COMMERCIAL REFRIGERATION EQUIPMENT

KELVINATOR STARTS BIG PARADE JULY 24

DETROIT - Kelvinator Corp. setting out to lengthen its peak sales season with a "Big Parade" sales campaign in which the annual Kelvinator Derby sales contest, with \$15,000 in cash prizes, and \$10,000 in merchandise

prizes, will be the main feature.

The derby contest will start July 24 and close Sept. 16. The \$15,000 cash prize money will be divided among the three high distributors on each of the 10 "tracks" or districts in which the contest is run, and the \$10,000 merchandise awards will be awarded for "lap" prizes, the special contests which take place every two weeks during the duration of the contest.

Unusually heavy national magazine and newspaper advertising schedules for this period of the year will carry the Kelvinator message to the consuming public during the "Big Parade"

Special emphasis will be placed on the sale of deluxe models with the continuation of the special deluxe

Schaefer Installs First Air Conditioner

MINNEAPOLIS — Schaefer's first MINNEAPOLIS — Schaefer's first air-conditioning installation has just been made in Wood's chocolate shop of St. Paul by engineers of Harold L. Schaefer, Inc., Universal Cooler distributor here. The installation includes two suspended air coolers, operated for the coolers of the state of the coolers. ated from a 3-hp. Universal condensing unit.

Before the equipment was installed temperatures ranged up to 100° F. in the store, making it impossible for the proprietor to display chocolates, so they were kept in a refrigerated room

GE-Warner Bros. Films Shown in Chicago

CHICAGO—Several Warner Bros. movie theaters in Chicago are giving regular showings of General Electric Co.'s film, "Just Around the Corner," this week, and all other Warner cinema houses in the city will show the film in conjunction with their regular bills within the next few weeks, according to S. Nides, sales promotion manager for R. Cooper Jr., Inc., G. E. distribu-

The distributor has a display of General Electric refrigerators in the lobby of each theater at the time of the G. E. film showing, and provides cards for theater patrons to fill out if they wish a demonstration of some General Electric home appliance.

KELVINATOR STANDARDIZE LINE OF BOTTLE COOLERS

DETROIT-Consolidation of Kelvinator Corp.'s bottled beverage coolers into a line containing three models of varying capacities, has been an-nounced to the field organization by J. A. Harlan, commercial sales manager

The three models which now make up the line are the BC-88, with storage capacity of 88 6-oz. bottles and hourly cooling capacity of 24 6-oz. bottles; the BC-128, with storage for 126 6-oz. bottles and hourly cooling capacity of 36 6-oz. bottles; and the BCC-26 with a dry-storage compartment for sandwich materials as well as storage capacity for 62 6-oz. bottles, and hourly cooling capacity of 12 6-oz. bottles. This unit, also made without the dry-storage compartment, cools drinking water at the rate of 1 gal.

G. E. LISTS DEALERS OF AIR CONDITIONING UNITS IN 32 STATES

NEW YORK CITY-Dealers have been established in 32 states by General Electric Co. to handle its line of

eral Electric Co. to handle its line of air-conditioning equipment.

Those who will sell the complete line of air conditioning are:

Air Conditioning Corp., Chicago; Air Conditioning Corp., Newark; Ahrens Refrigerator Co., Oklahoma City; W. D. Alexander Co., Atlanta.

Austin Electric Co., Auburn, N. Y.; Automatic Appliance Corp., Stamford, Conn.; C. H. Babb Co., Bangor, Me.; Bard & Barger, Inc., Clucinnati; Barker-Fowler Electric Co., Lansing, Mich.

Barr & Creelman Co., Rochester, N. Y.; Bocock-Stroud Co., Winston Salem, N. C.; Bridge Air Conditioning Corp., Springfield,

Bocock-Stroud Co., Winston Salem, N. C.;
Bridge Air Conditioning Corp., Springfield,
Mass.; Ernest S. Brooks, Concord, N. H.
Brosnan Heating Co., Worcester, Mass.;
The Cleland Co., Lynchburg, Va.; E. Pulver Cook, Inc., Providence, R. I.; M. J.
Daly & Sons, Inc., Waterbury, Conn.;
Dyer Electric Co., Hyannis, Mass.
S. S. Fretz, Jr., Inc., Philadelphia; C.
W. Gabler Electric Co., Olean, N. Y.;
General Air Conditioning Corp., Baltimore,
General Air Conditioning Corp., Washington, D. C.; General Air Conditioning
Corp., Madison, Wis.; Grant Radio Corp.

orp., Madison, Wis.; Grant Radio Corp., Norfolk, Va.; Arthur J. Harder Co., Kingston, N. Y. Hall Electric Co., Muskegon, Mich.; Alfred L. Hart, Patchogue, N. Y.; Hawes Electric Co., New Bedford, Mass.; Hoosier

Electric Co., New Bedford, Mass.; Hoosier Electric Refrigerator Co., Indianapolis; Kalteux Bros. Co., Inc., Schenectady, N. Y. L. C. Kelley Sales Co., Bridgeport, Conn.; W. C. Landon, Rutland, Vt.; Lawton Engineering Corp., Boston.

Mack Air Conditioning Corp., Atlantic City, N. J.; Gene Meenan, Inc., Brooklyn; A. Wayne Merriam, Inc., Utica, N. Y.; Alexander H. McDaniel, Inc., Wilmington, Del.; Mid-West Air Conditioning Corp., St. Louis. St. Louis.

N. K. Ovalle, Inc., Harrisburg, Pa.; Ochiltree Electric Co., Pittsburgh; Patter-son & Stirling Co., Erie, Pa.; Pflugradt

Ochiltree Electric Co., Pittsburgh; Patterson & Stirling Co., Erie, Pa.; Pflugrad Co., Milwaukee.
Phillips & Ibsen, Inc., Nyack, N. Y.; Richardson - Wayland Electrical Corp., Roanoke, Va.; Ryan Plumbing & Heating Co., Inc., Watertown, N. Y.; Schwartz & Munn, Inc., Saranac Lake, N. Y.; Schwartz Air Conditioning Corp., New York City.
John F. Skelly, Inc., Ogdensburg, N. Y.; Smith-Cunningham, Inc., New Haven, Conn.; Sutherland Air Conditioning Corp., Minneapolls.

Minneapolis.
Strain & Sutton, Poughkeepsie, N. Y. Strain & Sutton, Poughkeepsie, N. Y.;
A. H. Thompson-Sterling Co., Louisville,
Ky.; Wm. R. Thropp & Sons Co., Trenton,
N. J.; Wagner-Weeks Corp., Pittsfield,
Mass.; Thomas E. Ward, Hanover, N. H.
Warning Sheet Metal Co., Oshkosh, Wis.;
Westover-Wolfe, Inc., Albany, N. Y.;
Sumner L. Willson, Hartford, Conn.; W.
H. Sawyer Lumber Co., Worcester, Mass.;
H. H. Warren, Bennington, Vt.; Carle
Roehling Co., Richmond, Va.

Boehling Co., Richmond, Va.
Fifteen dealers, listed below, have
been selected to handle cooling equip-

ment exclusively.

George T. Bauder Co., San Diego, Calif.;

George Belsey Co., Ltd., Los Angeles; E.

O, Cone Co., El Paso, Tex.

Edmundson Refrigerating Corp., Hous-

Edmundson Refrigerating Corp., Houston, Tex.; Electric Home Appliance Co., Charleston, W. Va.; General Appliances, Inc., New Orleans; Glueck & Co., Kansas City, Mo.; S. C. Griswold, Inc., Dallas,

Tex.
W. N. Hogan, Inc., Wheeling, W. Va.;
O'Bannon Bros., Little Rock, Ark.; George
Patterson, Inc., St. Petersburg, Fla.;
Perry-Browne, Inc., Columbia, S. C.; B.
K. Sweeney, Inc., Denver; Valley Electrical Supply Co., Fresno, Calif.; Wright
Bros. Refrigeration Co., San Antonio, Tex.

Add this organization to your own





bove-Location of Wagner's 16 branch

At Left-The huge Wagner plant at St. Louis.

by applying WAGNER MOTORS to your refrigerators

When you design an electric refrigerator and program the expenditure of time, effort and money to develop sales for that product, you naturally give consideration to the staying qualities of that manufacturer. Perhaps you investigate the manufacturer's financial condition. All of this is good business.

Past performance is about the only yard stick by which you can measure the staying qualities of any manufacturer.

Wagner offers its record of forty years' service to the electrical industry as evidence of its staying qualities. In those forty years Wagner has built a national reputation and acceptance of its products. Wagner offers to refrigerator manufacturers and dealers the cooperation of a nationwide organization, 26 branch offices, service stations and motor warehouses.

Wagner Electric Corporation 6400 Plymouth Avenue, Saint Louis, U.S.A.

MOTORS

TRANSFORMERS

FANS

Babson Gives Signs of Recovery

NEW YORK CITY-Stating that the current upturn in general business conditions is not merely a temporary revival, Roger Babson, economist and business analyst, recently gave six reasons to support this belief. They are as follows 1. A change has taken place in the

hearts of the people.
2. Liquidation has been practically

completed. 3. Consumption is beginning to ex-

ceed production. he hanking situation has h cleaned up.

5. There is a possibility that the international mix-up will be straightened out.

6. The wave of pay reduction and the discharging of employes seems to have run its course.

FRIGIDAIRE KEEPS BARBER SHOP TOWELS COLD

DAYTON-Electric refrigeration is being used in the barber shop of the Dayton-Biltmore hotel here, where E. S. Kerr, who operates the shop, uses an electric refrigerator to give him a constant supply of cold towels.

"Cold towels," says Mr. Kerr, "bring more favorable comment than any other treatment, and I find that the electric refrigerator is one of the most valuable bits of equipment in my

Mr. Kerr uses a Frigidaire house hold refrigerator and operates it with the cold control set at 50 per cent of the cold control set at 50 per cent of full capacity. Towels are first mois-tened, then placed in a glass tray, and allowed to remain in the refrigerator until thoroughly chilled.

Ferro Will Contact G. E. USES CARTOONS Other Ceramics **Fields**

CLEVELAND-Ferro Enamel Corp. here is preparing to extend the sale of its product to more varied branches of the ceramic industry, instead of limiting it to the porcelain enameled metal branch only, according to R.

A. Weaver, president.
In the pottery and clay tile fields, the company has affiliated with the Allied Engineering Co. of Columbus, the latter organization to have charge of sale and servicing of Ferro "in the pottery and clay tile fields.

Ferro Enamel Corp. recently became affiliated with the Copper and Brass Research Association of New York City, which will promote the use of enameling on copper by means of new formulas evolved by the institute. The third step in the company's pro-

gram of expansion was effected by the merger of their furnace-building interests with those of the Surface Com bustion Co. of Toledo.

This company will install and engineer the porcelain enameling furnaces which the Ferro company has developed.

Largest Shipments

CLEVELAND—June was the largest month in point of tonnage shipped in the history of Ferro Enamel Corp.,

according to R. A. Weaver, president.

He further announced that a bonus
was paid on that date to all employes, bonus being 10 per cent of all salaries for the first six months.

The porcelain enameled house built by this company at the World's Fair is proving a tremendous success. Mr. Weaver says 15,000 to 20,000 visitors pass through the house each day.

New Sales Manager

CLEVELAND-Paul V. Blackburn CLEVELAND—Paul V. Blackburn and David L. Cable have been appointed sales manager and assistant sales manager, respectively, of the Ferro Enamel Corp. here.

IN ADVERTISEMENTS

BUFFALO—Advertisements inspired by Ripley's "Believe It or Not" car-toons are bringing business to Frank C. Wolf, General Electric distributor here.

Captioned, "Do You Know?" and containing unusual facts about G. E. refrigerators, the series of cartoons has been running in the Buffalo News. At the time the flight over Mt. Everest, world's tallest mountain, was attracting public attention, the distributor based his advertisement on the idea that the General Electric refrigerators

sold in Buffalo would reach higher than the mountain.

A drawing of Mt. Everest took up the center of the cartoon, with the statement above it, "Mount Everest is the highest peak in the world, 29,141

Small G. E. Monitor Tops were stacked on top of each other, forming a vertical line reaching above the peak. "Do-you-know," read the advertisement, "the General Electric refrigulations of the state of erators sold by Frank W. Wolf, Inc., in the City of Buffalo would reach higher than Mt. Everest, BUT, (and here a penny was pictured) the average cost per refrigerator for service has been less than 1 cent per year."

Westinghouse Used in Keeping Vaccine

MEMPHIS, Tenn.-To keep 500,000 cu. centimeters of vaccines and serums proper degrees of cold, a large Westinghouse commercial refrigerator has been installed in offices of Memphis Serum Co. here by Wayne Spinks Co., local Westinghouse distributor.

The serum company of which A.

H. Adams is manager, protects and
treats livestock throughout the Central
South with its vaccines. Required South with its vaccines. Required storage temperature for the medicines

range between 40° and 50° F.
According to Mr. Spinks of the distributorship, this is the first refrigerator of its kind to be installed in this part of the South.



Coil of 60 ft.

Reel of 425 ft.



FRENCH TUBES

are available in



LONG LENGTHS

NEWLY developed process makes possible the production A of French Seamless Copper Refrigeration Tubes as large as one-half inch in diameter, in lengths up to 200 feet. Smaller tubes are available in even longer lengths. For instance, the onequarter inch tube illustrated is 425 feet long.

These new long lengths materially reduce the risk of failure by minimizing splices. Also the longer lengths reduce scrap losses, as the exact amount required can be cut without waste

French De Luxe Copper Refrigeration Tubes are free from oxide and foreign matter. Each coil is completely dehydrated, sealed, rigidly tested and reaches you ready for use. For manufacturers who prefer to do their own dehydrating, the French Manufacturing Company produces copper tubes dried (commercially dehydrated) with either open or closed ends.

All French Copper Refrigeration Tubes possess the requisite properties for lasting, dependable service. Their grain structure is uniform. These important qualities are in every coil because metallurgical skill, long manufacturing experience and only the best of raw material go into their production. Additional information will be furnished upon request.



THE FRENCH MANUFACTURING CO. General Offices: Waterbury, Connecticut

FRENCH REFRIGERATION TUBES

ENGINEERING

Many Coil Sizes Built to Meet Special **Needs of Commercial Installations**

HARTFORD, Conn.—Changing demands of installation engineers for finned tubing for evaporators show an inceasingly better understanding of the refrigeration requirements of specific installations, according to C. T. Bappler, sales manager of the Bush

'Although the use of extended surface for heat transfer purposes is not new, its fundamental advantages were not available for general use until the development of production machinery made possible its manufacture at reasonably low costs," he states

First Units Crude

"The first units were necessarily crude, and by the same token costly in proportion to the increased ef-ficiency. As time passed, the original cast iron fins bolted to iron pipe were replaced by sheet metal fins of comparatively light weight fastened by various means to standard tubing. Thus, a fin coil convenient in size and light in weight came into being and the demand for it increased daily in step with the development of small low-pressure commercial compress-

Three years ago the average commercial refrigeration dealer wanted merely a coil with fins on it and was little concerned beyond that point, Mr. Bappler points out. The size of the fins, the distance apart were given little thought and the overall dimensions were all right if he could get the "Gradually, however, from observa-tion of many installations, the dealer began to take an active interest in coil design. From then on it was not just a fin coil that was called for, but a certain kind of a fin coil to do a specific job.

"This type of demand was so general that the Bush company decided to develop a line of individual fins graduated in size so that a very wide variety of fin and tube sizes would be available to take care of the in-creasing number of different applica-. At the same time, it was neces-to have the fin spacing optional so that the required total surface could be obtained in the space available for the coil.

Standard Heights

"Two years ago most Bush coils or-dered for overhead bunker walk-in coolers were 11% in. high; now practically all coils for such installations are either 8½ in. or 5% in. high. Coils today are being ordered not only according to authors being ordered by the december of the control o cording to surface, but with the idea of distributing the surface well in the path of air circulation. This speaks well for the type of commercial in-stallations being made.

"The development of unit coolers and air-conditioning coils called for smaller fins and closer fin spacing than is required for convection coils, Mr. Bappler continued.

"A comparatively large amount of surface had to be crowded into a small space, and more tube surface in

proportion to fin surface to take care of the increased heat transfer made possible by fast-moving air.

"That air conditioning is an accomplished fact is indicated by the fact that one national company alone has taken delivery of 1,200 fin coils from April 20 to June 30.

"From orders in the Bush factory, it is quite evident that this branch of refrigeration is now out of the experimental stage and well on the way to real accomplishments," he declared. "The ever-increasing market for commercial refrigeration is clearly seen when it is realized that these

seen when it is realized that three years ago a dozen sizes of finned tubing were sufficient for that time, and today the Bush line of finned tubing includes 38 combinations of fin and tube sizes and fin spacings to meet today's diversified requirements for completely fabricated fin-type coils.

American Chain to Sell Allegheny Metal

BRIDGEPORT, Conn. ments have been concluded whereby the American Chain Co. and associate companies will take over the drawing, fabricating, and sale of Allegheny metal and other Allegheny alloys in round, flat, and shaped wire forms. This new wire will be marketed under the name of Page-Allegheny Alloys, and will be sold by the Page Steel & Wire Co. of Monessen, Pa.

Negy Sound Deadener Applied with Spray

DETROIT-To serve as a sounddeadener for the compressor compartment of electric refrigerators, Dr. J. A. Negy has developed a material which can be sprayed on the inside surfaces of the compartment.

The deadener is applied by a spray gun with a large nozzle, to a thickness of about ½ in. Basic material of the deadener is fibre and other soundabsorbing matter. The deadener has been adopted for Grunow refrigerators.

CATALOGS

Corinco Corkboard
Cork Insulation Co., Inc., of New
York City, has brought out a 40-page catalog on its Corinco cork products. Insulation of cold storage warehouses, breweries, packing houses, ice plants, dairies, and ice cream factories with corkboard is described and illustrated. Printed in brown on a cream-colored background, the booklet is convenitabbed to facilitate location of its subheads: organization, products, engineering, corkboard, machinery isolation, installations, pipe covering acoustical, and marine division.

American Radiator Steam Heat "Modernization Tried" is the title of a booklet issued by American Radia-tor Co. being used to further public interest in its heating equipment. It consists of 15 "Modernization Re-ports," compiled as a result of calls made on users of American Radiator steam heating devices. Cost of heating before and after installation, for-mer heating arrangement, reason for modernizing, present heating plant, operating data, increase in rentals and set forth statistically in each case, accompanied by a picture of the building in which the installation was made.

Kold-Hold Installation Manual

To clarify problems of installation of Kold-Hold equipment in mobile and stationary refrigerated bodies, the Kold-Hold Manufacturing Co. of Lan-sing, Mich., has made up an installasing, Mich., has made up an installa-tion manual. Complete process of in-stallation, from uncrating of the equipment to calling back on the owner, is described by L. H. Smith, chief engineer. Eight drawings of typical installations and parts of the system occupy the last half of the manual. Mercoid Controls

Catalog R-4 from the Mercoid Corp., Chicago, deals with Mercoid refrigeration controls, including thermostats, high- and low-pressure controls, gauges, solenoid valves, low-water controls, and switches of various types. Illustrations of the controls are scattered throughout the catalog, which concludes with schematic wiring diagrams and instructions.

York Evaporators

Advantages of York Spiro-Fin evaporators and York Square-Fin evaporators are set forth in two bulletins issued by York Ice Machinery Corp., York, Pa. Complete descriptions of York, Pa. Complete descriptions of the evaporators, with illustrations and outlines of typical uses, make up the

Gilmer Belts

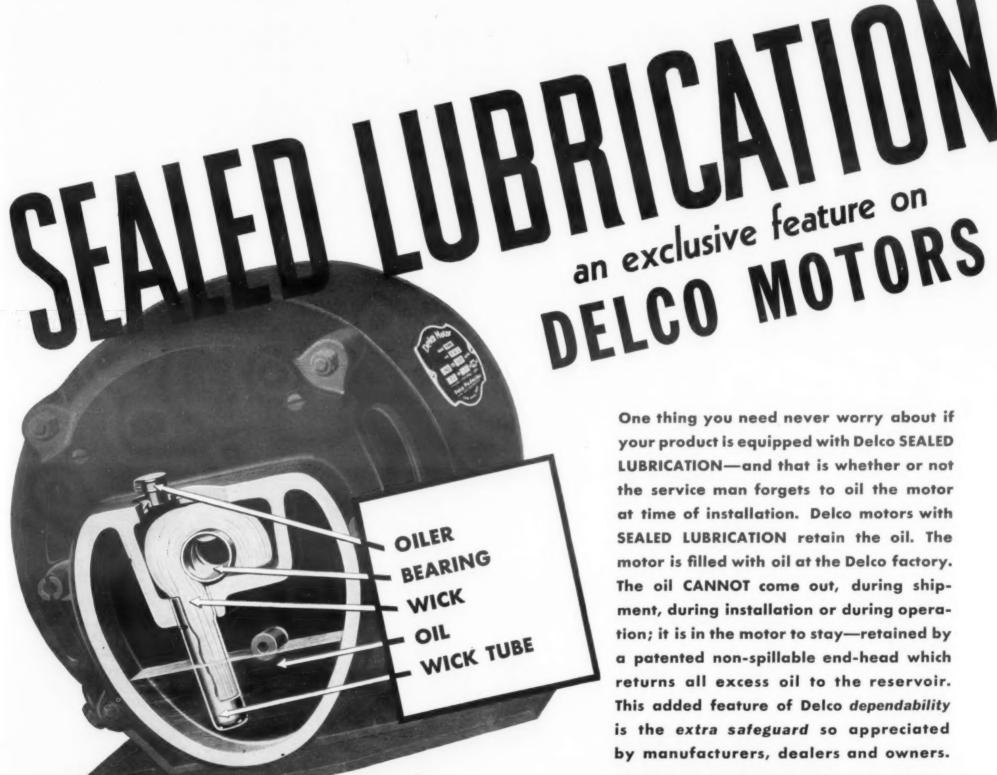
The July, 1933, alphabetical and nu-merical price list for Gilmer moulded rubber belts for electric refrigeration units is now available. All companies using belts, with their requirements. are listed in the alphabetical section, while the numerical list gives prices on the complete line.

Russ Bars

Service bars, novelty boxes, and coil boxes are described in a new brochure published by the Russ Soda Fountain Co., Cleveland. This illustrated book-let discusses the Russ line of bars, with specifications, and gives sugges-tions as to suitable use of the various

Metallizing

Being mailed out to companies in-terested in the metallizing process is a new 20-page booklet prepared by the International Metallizing Association, Los Angeles. Claiming to be the first publication ever to treat the subject fully, the booklet discusses advantages, applications, and accessory equipment. Data charts, illustrated sections on metallizing requirements of several industries, and information on factory organization, patents, and prices, are also included.



One thing you need never worry about if your product is equipped with Delco SEALED LUBRICATION—and that is whether or not the service man forgets to oil the motor at time of installation. Delco motors with SEALED LUBRICATION retain the oil. The motor is filled with oil at the Delco factory. The oil CANNOT come out, during shipment, during installation or during operation; it is in the motor to stay—retained by a patented non-spillable end-head which returns all excess oil to the reservoir. This added feature of Delco dependability is the extra safeguard so appreciated by manufacturers, dealers and owners.

DELCO PRODUCTS CORPORATION DAYTON, OHIO

AIR CONDITIONING

Railway Air Conditioning Similar To Stationary Cooling **Except for Power**

By W. C. Goodwin and Charles Kerr, Jr. Westinghouse Electric & Mfg. Co.

HE desire for summer air conditioning of railway cars has introduced real engineering problems of the most severe kind, and one set of solutions is outlined in this paper. While air conditioning for commercial purposes is not new, the equipment is not applicable to railroad service. To obtain a suitable equipment involved the development of new systems of power supply,

more compact and lighter refrigerating plants, and brought out many problems in mounting, design for limited space, etc., incidental only to railway application.

The ideal equipment for railway service should be light in weight, reliable, and mechanically suited to this application. It should also be easy to install, inspect, and maintain.

It should require no floor space, no attention of any kind between regular inspection periods, and eliminate all unnecessary auxiliary apparatus. And lastly, both the power supply and cooling systems must have ample capacity, and the system be suitable for operation either in transit or in

Temperature and Humidity

Due to limitations in available power capacity and space, it is im-practical to do all the things on a railroad car which can be more simply done in commercial applications. However, experience has proved that com-fortable conditions which, in general, approach the best industrial and domestic practice, can be provided on a railroad car.

Experience has shown that the maximum temperature differentials be-tween inside and outside conditions should not exceed 15° F., except under extreme conditions.

The temperature differentials recom mended by the American Society of Heating and Ventilating Engineers should be followed. For outside tem-peratures above 95° F., the inside of the car will be sufficiently comfortable if the maximum temperature is held to 82° F., and the relative humidity to 60 per cent.

The refrigerating capacity is used both to reduce the air temperature and to take moisture from the air. Holding the moisture content down is as essential as lowering the temperature

depends upon many factors, including the number of passengers, size of car, type of insulation, type of windows, etc. Therefore, to meet the requirements of every type of car would require a wide variety of compressor capacities, which is not an economical procedure from the manufacturing standpoint.

Calculations have been made for a large number of different types of cars. These calculations are now sup-plemented by test experience on coaches, diners, parlor cars, and sleep-

ing cars.

These data indicate that a system which will deliver 6 tons of refrigera tion at the cooling coils will be satisfactory for the average car installation, which required approximately a total of 12-hp. motor capacity.

In addition to the cooling load, the

source of power must provide for car lighting and battery charging. Fortunately the cooling system is usually only intermittently operated when the lights are used, so that these loads do

not pyramid.

It is essential though that the source of power have ample capacity to maintain the batteries under the most severe operating schedules. To provide properly for these loads, a total of 15 kw. in power capacity is required on each car.

Problems of Design

Many interesting design problems were encountered in the production of a suitable air-conditioning equipment for railway service. A discussion of these problems, together with a description of their solution, will not only provide an account of a most interesting development, but will also best give a comprehensive story of the requirements of this service.

Due to the operating advantages de-rived by having each car an independent unit suitable for operation any-where at any time, present develop-ment has followed along the lines of using an axle generator on each car,

Testing a Railroad Air-Conditioning Plant



Air-conditioning system on test in the Westinghouse laboratory. In the foreground is a box containing the refrigerating machine, at left center is the control board, and in the rear is a dummy car with the air-cooling unit.

augmented by a battery for power duraugmented by a battery for power dring station stops. This practice required the development of a light-weight generator of large capacity and a light-weight battery of 800-1,000 ampere-hour capacity.

Generator Drive

For generators of 15-kw. capacity a new type of drive was essential. Present flat belt drives are limited to about 5-kw. maximum. To obtain light-weight generators which will fit into the available space, high speeds are required, involving belt speeds far in excess of present practice.

The lower center sills of passenger cars limited the size of pulleys. This in turn made large speed increases with belts alone prohibitive. The belts are further subjected to severe shocks, such as occur when coupling cars, and also are exposed to the weather. They must also accommodate the relative movement of the trucks, axles, etc. The drive problem may be solved in

two ways: either by a gear drive, or by a new form of belt drive. From the standpoint of the drive alone, gear drives offer the best solution.

The principal objection raised by the railroad operators to the successful application of a gear drive is the stress which would be imposed on the gear teeth when coupling cars. No experience was available in similar service.

As a result three types of gears have been placed in service, solid gears, flexible gears, and slip gears. All have worked excellently and no failures of any kind have occurred with any of the gears. Consequently, for bumping stresses, it has been definitely proven that any of these gears are satisfac-

Another problem involved in a gear drive is the elimination of noise. This has been solved by designing an oil-tight totally enclosed gear case, by the use of roller bearings to maintain ac-curate gear centers, and by helical gears with several teeth always in

mesh.

Due to the low center sills of some Sulphur Dioxide by Microphoto-graphs" from Industrial and Engi-graphs" from Industrial and Engi-This did not allow sufficient gear center distance to accommodate a 15-kw generator with the gear ratio required

To give a greater gear center distance, and idler gear with roller bearings was interposed between the main known everywhere as EXTRA gear and the generator pinion.

There is considerable difference of opinion relative to the question of re-taining a standard axle. Its retention would necessitate some form of a split gear, which past experience on street cars and locomotives has shown at high pitch line speeds to be unsatis-factory. The elimination of the gear drive for standard axles practically forces a modified belt drive. For proven purity and performance, specify EXTRA DRY ESOTOO. Prompt Service from 36 convenient distributions

To obtain long belt life the belts should operate at low speeds and always in as perfect alignment as pos-sible. The low belt speed can be ob-tained by building into the generator itself a small reducing gear unit to obtain the necessary generator speeds.

By mounting the generator on the end frame of the truck, the best align-ment was obtained. A tension device accommodates the belt stress, and the generator is driven from the pulley on the tension device by a torque shaft with universal joints.

The development of a 15-kw. genera-

which will fit into the space avail-

able on standard six-wheel trucks offered many problems. These trucks have longitudinal members inside the wheels which limit the total space to about 37 in.

Similarly, the distance from the censimilarly, the distance from the center of the axle to the end frame is only 23 in. This space had to accommodate both the generator and the drive. Of the 37 in., 3 in. were required for axle lateral play, giving only 34 in. for the generator and drive.

Steam railroad passenger cars operate in all sections of the country in-

ate in all sections of the country, including the deserts of the country, in-cluding the deserts of the west and the heavy snow regions of the north. For such service, a totally enclosed machine was desirable which made still more difficult the problem of rating in the given space.

These generators must also deliver their rating from 25 to 90 miles per hour train speeds. The center sill and rail clearances limited the overall diameter to 18 in.

High peripheral speeds were used to obtain a greater rating. At 90 miles per hour the generator speed is 3,200 r.p.m. This required the best quality of core binding and comutator con-

Cooling Fins on Generator

The frame was cast with ventilating fins in all available spaces to take advantage of the movement of air over the frame on a moving train. Class B insulation was used throughout. Special types of armature coll and core were developed to allow the use of the maximum amount of copper in the available space.

After obtaining the necessary rating, two serious problems presented themselves. First, since these generators charge the storage batteries, their polarity must always be the same regardless of the direction in which the car moves.

Second, a constant voltage must be maintained over a wide range of car speeds. In addition, the characteristics of the generator and its control must be so designed that they give the maximum battery life.

The problem of maintaining polarity

offered many difficulties. Since the standard car lighting circuits use 32 volts direct current, the current rating of the generator is approximately 400 amperes.

Because of these heavy loads, to rotate the brush rigging by brush friction is not a positive operation. The use of polarized relays in traction service has never been successful.

Along with the problem of polarity was the problem of regulation. The field currents with a large generator exceeded those which could be successfully handled with a sensitive vibrating regulator. The solution of both of these problems was obtained

both of these problems was obtained by the use of a small exciter placed on the end of the generator shaft. The frame of this exciter was made of special high retentivity iron and magnetically insulated from the gen-erator. The field circuits of the ex-citer, excited by the generator, then

always remained in the same direction.

With a reversal in train direction,
the exciter reversed the generator field, but since the generator armature also reversed, its polarity remained unchanged. By regulating the exciter fields, the regulator was required to handle only very small currents.

The regulation of a generator of this

type deserves special mention. Whenever the generator voltage reaches that of the battery, it must be connected in to carry the load. It then increases to about 38 volts to charge the battery, and this must be maintained at all higher speeds.

This can be accomplished either by inserting resistance in the exciter field or by manipulation of the field circuits. The latter is preferable since it eliminates carbon pile resistors.

The scheme developed in this instance has given good results. The exciter has four field windings, two main, and two auxiliary. At low speeds where maximum excitation is required, all fields are in series.

The regulator then cuts out one-half the main field as the train speed increases. At still higher speeds the auxiliary winding opposes the remaining main field winding. The combined (Concluded on Page 13, Column 1)



STORAGE—DRY SYSTEM

DUE TO STORAGE RESERVE, chilled water is always available to meet "peak-loads," in excess of condensing unit hourly capacity. DIRECT CONTACT COOLING. Extra heavy, steel pipe, evaporator expansion coil submerged in drinking water effects instant heat transfer. Strength of coils ellimitates possibility of refrigerant getting into drinking water or water into refrigerant.

Steel Pipe Coils DEHYDRATED—CLEANED

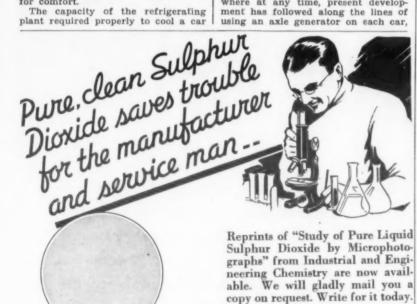
Filtrine Mfg. Co. Brooklyn, N. Y.



REFRIGERATOR

FEDERAL REFRIGERATOR **FURNISHINGS**

The only complete line-saves space—saves food—saves money They increase the capacity and efficiency of every refrigerator FEDERAL ENAMELING & STAMPING CO. World's Largest Manufacture of Enameled Kitchenware PITTSBURGH . PENNSYLVANIA



Our refrigeration grade DRY ESOTOO is PURE and CLEAN, as these microphotographs show. Through every step

No. 1. EXTRA DRY ESOTOO evaporated to dryness and mag-nified 75 diameters.

No. 2. Well known sulphur dioxide, refrigeration grade, evaporated to dryness and magnified 75 diameters.

VirginiaSmelting Co. West Norfolk, Va.

F. A. Eustis, Sec., 131 State St., Boston and 76 Beaver St., New York.



exercised to keep it so.

in its production, every care hu-

manly and scientifically possible is

n 36 convenient distribut-Cable Address: "EUSTIS

Water Spray Used for

Air Conditioning

BALTIMORE, Md.—Air conditioning Engineers, Inc., of this city is manufacturing a line of "Ace" air-

conditioning equipment which per-forms all six functions of year-'round

air treatment. The Baltimore concern actually produces only the humi-difying, dehumidifying, and washing apparatus, but secures equipment for other functions from outside sources.

Operation of the Ace system is as follows: Fresh and recirculated air is mixed in a chamber, and enters the

air-conditioning unit, where it comes in contact with a spray of water which is heated by steam or cooled by electric refrigeration.

Thermostatic controls for mainten-

Thermostatic controls for mainten-ance of a predetermined temperature in the sprays are provided. In win-ter, the air is then passed through a reheater, where the necessary sensible

heat is added, then on to a circulating blower and conditioned through ducts.

SPECIAL GENERATOR **DEVISED TO OPERATE** AIR-COOLING PLANT

(Concluded from Page 12, Column 5) result of regulating and changing connections gives very good voltage characteristics

The third problem is that of battery The third problem is that of battery charging. To obtain the characteristics, a tapered charge should be delivered to the battery. This was accomplished by the use of a modified constant potential system. In addition, a series coil was added to the regulator to prevent overloads with a completely discharged battery. discharged battery.

Twelve generators with gear drives have operated throughout the past summer with most gratifying results. Belt drive units have shown excellent results in factory tests.

Refrigerating Apparatus

Because of the limitations of rail-way service, the refrigerating system should eliminate the necessity for con-stantly replenishing water and also should provide the most efficient re-frigerating cycle.

The limitations of space and clearance on a railroad car are very re-strictive. The clearance limits in districts where third rails are used, are more severe than in other sections of the country. These limitations required the minimum size of refrigerating box.

For ease of installation and maintenance, a complete condensing equip-ment in one unit, factory assembled is desirable. As it costs money to haul around excess weight, it was considered desirable to reduce the weight to a minimum. From the standpoint of maintenance, a direct-driven compressor offers the best form of drive.

To meet these requirements a high-speed compressor was developed to operate with freon and sufficiently mall to meet the space and clearance limitations.

The principal difficulty in a high-speed compressor was the development of a valve which would operate at these speeds with freon and at the same time provide a volumetric efficiency with a high-speed compressor equal to that of the slower speed units.

Sufficiently large port openings must be provided. The dead space above the piston on the compression stroke had to be reduced to a minimum. The problem of lubrication had to be settled and a valve was required which would not get noisy with wear.

Considerable experience had been obtained in domestic refrigerator compressor, which led to the development of a valve consisting entirely of flat strips of special grade steel.

Thin Steel Compressor Valve

The steel strips are only subjected to deflection of a small amount and, therefore, no lubrication is required, and all possibility of noise with wear is minimized. Exhaustive fatigue tests have been made on this type of valve, and show that it will have a long life.

For bearing and cylinder lubrication with the high speed, a geared oil pump was provided in the crankcase to proforced lubrication throughout. The third difficult problem is a satisfactory seal for the refrigerant on the crankshaft.

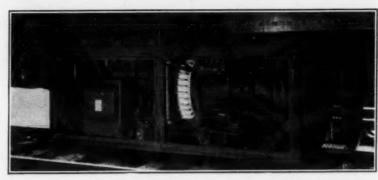
Any refrigerating gas is extremely hard to hold, especially freon. A spe-cial sylphon bellows seal was developed where a special alloy seal was nade against a steel disc, held tight by spring pressure. The construction was such that the gas pressure in the crankcase increased the pressure on the seal.

The proper speed was a compromise

between compressor construction and motor speed. After careful consideration of all factors, a speed of 1,000-1,200 r.p.m. appeared most desirable.



Below the Car



Cover removed from the Westinghouse refrigerating system installed under a railroad car for air conditioning.

To eliminate the use of water, an air-cooled condenser is necessary. For operation at high ambient temperatures without excessive pressures requires a large cooling surface in the condenser, and a large volume of air.

A condenser was obtained which would fit into the rear of the unit and require no more length or depth than that required by the other apparatus. A large amount of research work was devoted to developing a fan capable of delivering about 6,000 cu. ft. per minute with minimum use of power.

A special design of propeller type fan made of aluminum alloy was de-veloped which required about 1.5 hp. for this quantity of air. This fan had to be sufficiently small to meet the railroad clearances which considerably hampered the design.

One of the big problems in mechanical cooling of cars is that of pre-cooling. Often sleeping cars are parked for occupancy for several hours. A battery of sufficient size to take care of this service is prohibitive.

During the periods when the train is moving, a 32 volt d.c. drive is used, since practically all cars are now equipped with this system.

However, pre-cooling cars throughout a terminal with 32 volts would require a prohibitive distribution system. At most locations the central stations can provide 220-440 volt, three-phase, 60-cycle power very easily, so this is the local system to use.

Combination a.c.-d.c. Motor

An a.c.-d.c. drive within the limited space, required the design of a new motor because of the fact that the equipment operated in all parts of the country, and an enclosed d.c. motor was very desirable.

By special insulation, ventilating fins, special insulation, ventilating fins, special coils, etc., a combination of a d.c. motor and an a.c. motor with common shaft was produced within the space requirements of an ordinary d.c. motor of the same capacity. To provide 6 tons of refrigeration and cool the condenser, approximately 11

hp. are required.
When operating from the a.c. source the d.c. motor acts as a generator to charge the storage batteries if such charging is required. To accomplish this added feature, the drive is by the a.c. motor which has a rating of 15

hp. continuously.

Experience has shown that the maximum amount of air which can be supplied to a car without objectionable drafts is about 2,500 cu. ft. per minute with a duct distribution system. To handle this amount of air a total duct cross section of at least 200 sq. in. is

The duct system provides the best method of distribution in a car. However, the installation of ducts in existreason is not desirable if it can be avoided. Considerable work has been done with systems other than

ducts, and on certain cars this form of distribution will probably be used. To provide for the health of the passengers, approximately 25-30 per cent of the air circulated in the car should be fresh air. This air is brought into the car through openings in either the deck or the vestibule, and passes through some form of filter. It is mixed with the recirculated air before

The cooling units used with all systems are essentially the same. Either brine, water, or refrigerant is carried through the car. With systems using a refrigerant, it is expanded from a liquid at high pressure to a gas at low pressure, during which heat is absorbed from the air.

With a duct system of ventilation about 1-hp. fan motor capacity is required to handle sufficient air.

Conclusions

Experience obtained during the summer of 1932 indicated the follow-

ing:

1. That conditioning the air of railway passenger cars is desirable, feasi-ble, and practical.

2. That complete systems from the source of power supply to the condi-tioned air have been worked out to the point of practicability.

3. That performance comparable to the best stationary practice is now possible on railway cars.

4. That equipment to accomplish the required results can be constructed within the limitations of space and weight imposed by railway service.

Perfection Stove Co. Starts Campaign on Air Conditioning

CLEVELAND-Perfection Stove Co., Inc., manufacturer of Superfex oil fur-naces which heat, humidify, clean, and circulate the air of homes and small business establishments, has launched among its dealers a campaign de-signed to encourage use of specialty selling methods in the merchandising

of Superfex equipment.

Every dealer has been supplied with a newly prepared manual advising him on proper methods of store display, advertising, prospect location, and salesman training. Featured part of the book is a complete model sales talk, which the manufacturer sug-gests be followed closely by Superfex

men in making sales presentations.

One sales tool given dealers and salesmen by the Perfection company is a book of some 70 pages containing the results of a survey made by the manufacturer's advertising agency to determine what kind of homes were installing Superfex equipment, what degree of satisfaction the latter was giving, and how much it was costing to operate.

The manual, titled "Facts," shows copies of the questionnaires returned by Superfex users in New England where the survey was made—shows with most of the questionnaires plctures of the homes where Superfex equipment is in use. There is no conclusion-drawing text. Salesmen and dealers are merely urged to show this book to prospects, and let the latter reach their own conclusions.

The Perfection organization is now

cooperating with the Commercial Investment Trust Corp. in handling of deferred payments by buyers of Superfex equipment, according to C. H. Foulds, sales manager, and dealers are being instructed in particulars of the C.I.T. time payment plan.

OMAHA HOTEL INSTALLS BAKER AIR-COOLING PLANT

OMAHA-Just installed in the Hotel Fontenelle here to cool, clean, circulate, and dehumidify the air in its two restaurants and drug store is an air-conditioning system supplied by the Baker Ice Machine Co., Inc., of this city.

A Baker 6¼x6¼-in. compressor, driven by a 30-hp. motor, supplies the refrigeration for the system, accord-ing to George M. Sebree of the Baker company. The condenser is of the shell and tube type. Foundation for the compressor and motor is mounted on 2 in. of isolation cork.

The compressor's operation is controlled by an automatic thermostat, while the pump motor and fan motor are manually controlled. The air washer has two banks of sprays, each spraying on a Baker header type coil. Coils are of the flooded type, and the flow of refrigerant is regulated by a thermostatic expansion valve. A horizontal insulated surge drum is used in the suction line.
Two coffee shops conditioned have

a total air capacity of 51,000 cu. ft., and a combined seating capacity of about 250, according to Mr. Sebree. The drug store, having 14,500 cu. ft. of space, is connected to the air-conditioning system by a duct which delivers approximately 1,500 cu. ft. of cooled air per minute.

cooled air per minute. No return air is taken from the drug store, the plan being to supply cooling to the drug store only when there is an excess of cooling effect to be had from the ducts connected to the two restaurants.

Total air handled by the system—which is composed of a washer, fan, and duct arrangement, in addition to the Baker equipment for cooling the water for the washer—is about 10,000 c.f.m., of which 7,000 to 8,000 cu. ft. is return air from the coffee shops.







Stalled on the line under full voltage for THREE MONTHS the Thermoguard motor shown above was unbarmed. This Thermostat protected it. An ordinary motor would bave been destroyed in a few seconds.

YOUR profits are insured against service losses, and your sales are made easier-when you sell refrigerators powered by Westinghouse THERMOGUARD Motors. Thermoguard motors can't burn

out! They are protected by the well-known Westinghouse Builtin-Watchman Thermostat against every abnormal starting and running condition. The thermostat automatically stops the motor before its temperature reaches the danger-point and starts it again when conditions are safe, without manual resetting.

This self-protection protects dealer profits, for it ends service costs, complaints and customer dissatisfaction caused by motor failure.

Among other important advantages of Thermoguard Motors are: Remarkably quiet operation resulting from its scientifically designed resilient mounting; minimum power consumption; simplicity of design and a special oiling system that insure trouble-free performance.

It will pay you in saved service dollars and increased sales-appeal to insist on burn-out-proof Thermoguard motors for the refrigerators you handle.

Westinghouse

Quality workmanship guarantees every Westingbouse product



SEND FOR INFORMATION

Westinghouse Electric & Manufacturing Company Room 2-N-East Pittsburgh, Pa.

Gentlemen: Please send information on Thermoguard self-protecting motors.

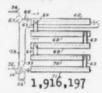
Name Position Сомрану......Т 79459

PATENTS

ISSUED JULY 4, 1933

1,916,197. REFRIGERATING APPARATUS. Ernst S. H. Baars, Milwaukee, Wis., assignor to The Vilter Mfg. Co., Milwaukee, Wis., a Corporation of Wisconsin Filed Sept. 4, 1931. Serial No. 561,147. 7 Claims. (Cl. 62—126.)

In combination, an evaporator com-prising a series of superimposed tubular sections and riser pipes extending from



the top of each lower section into and above the bottom of the adjacent upper above the bottom of the adjacent upper section, overflow elbows within the upward extensions of said riser pipes terminating below the tops thereof, one of said elbows having a V-notch in the overflow edge thereof, and a float controlled valve operable by variations in the level of refrigerant in the lower of said sections for delivering refrigerant to an upper of said delivering refrigerant to an upper of said

1,916,315. MEANS FOR AUTOMATIC-

REFRIGERATOR



-OILS-

WANTED **Rubber Problems**



WE'LL FIND YOU THE ANSWER

Stage Miller has stalled the blueprint Stage Miller has tackled and solved its rubber problems. Filling exacting requirements is our daily routine. An ex-perienced technical staff divides among its members responsibility for rubber parts of practically every leading make of refrigerator.

Compounds which eliminate avoid checking and cracking, retain their "spring," resist deteriorating action of butter, grease, mayonnaise. Our bluecannot fail to interest and help the production engineer. Yours for the asking. Just write. Miller Rubber Products Co., Inc., Akron, O.



ALLY DEFROSTING REFRIGERATING UNITS. Charles Thomas Hoffman, Washington, D. C., assignor of one-half to Emory L. Groff, Washington, D. C. Filed July 3, 1929. Serial No. 375,647. 56 Claims. 62-4.)

(Cl. 62-4.)

 In a refrigerator, the combination with the cooling unit and means for interrupting and restoring the refrigerating cycle thereto, of means adapted to contact with and allow the ice formation on the surface of the cooling unit to automatically control said means for interrupting and restoring the refrigerating cycle.

1,916,332. AIR COOLING ATTACHMENT FOR ELECTRIC FANS. William G. Rogers, Waxahachie, Tex. Filed Aug. 24, 1931. Serial No. 558,911. 2 Claims. (Cl. 261—92.)

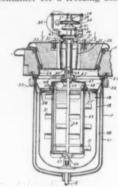
1. In combination with a cooling fan 1. In combination with a cooling fan having a guard mounted over the fan blades, a humidifier comprising a stationary drum having both ends open to permit the passage of air therethrough, a flange extending a limited distance into the open ends, hooks carried by said drum for removably securing the drum to said fan guard, a shaft revolvably mounted within said drum, a second open ended drum mounted upon said shaft and adapted to revolve with said shaft, a series of loops mounted upon the inner surface of said second drum and upon the shaft, a strip of absorbent material secured to said of absorbent material secured to said loops, and at least two adjustable blades secured to said second drum in such a manner that air from the fan will rotate the shaft and the second drum.

1,916,724. ATMOSPHERIC COOLING TOWER. Peter E. Fluor, Anaheim, Calif., assignor to The Fluor Corp., Ltd., Los Angeles, Calif., a Corporation of California. Filed July 5, 1932. Serial No. 620,790. 22 Claims. (Cl. 261—113.)

1. In an atmospheric cooling tower comprising a frame, a substantially vertically extending apertured baffle mounted at one side of the tower, a panel extending inwardly of the tower, from the lower end of said baffle, a vertically extending apertured baffle offset inwardly of the tower from the first mentioned baffle, and extending downwardly from said panel, and a plurality of vertically spaced decks within the tower, both said baffles being spaced transversely of the tower from said decks.

1,916,746. APPARATUS FOR AND METHOD OF MAKING ICE CREAM OR THE LIKE. Thomas H. Swisher, Schenectady, N. Y., assignor to General Electric Co., a Corporation of New York. Filed May 10, 1928. Serial No. 276,766. 20 Claims. (Cl. 62—116.)

1. In combination with a refrigerator cabinet, a cooling unit therein in the form of a container for a freezing solution hav-



ing a refrigerating system associated therewith, said cooling unit including a closed evaporator chamber surrounding said container and communicating with said system, a vessel adapted to contain a mixture for making ice cream or the like, means for supporting said vessel in said container and in direct contact with the freezing solution therein so as to utilize the refrigerating effect of the freezing solution to freeze the mixture in said vessel and means for agitating the mixture during freezing the same.

1,916,848. CONCEALED REFRIGERATOR LOCK. Edwin W. North, Rockford,
Ill., assignor to National Lock Co., Rockford, Ill., a Corporation of Delaware.
Filed May 22, 1931. Serial No. 539,188. 11
Claims. (Cl. 70-91.)
1. In a concealed refrigerator lock, a
post, a handle secured to one end of said
post for rotating the latter and a bolt
secured to said post for rotation therewith,
and means for heat insulating said bolt
from said post to prevent transmission of from said post to prevent transmission of heat from said bolt to said post.

1 916 852 REFRIGERATOR CONSTRUC-TION. Francis Marvin Sutton, New York, N. Y. Filed June 10, 1930. Serial No. 460,113. 4 Claims. (Cl. 312—150.) 2. In a refrigerator construction, a sup-

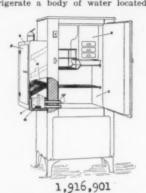
2. In a refrigerator construction, a support comprising front and rear frames each consisting of vertical members spaced from each other by horizontal members, and a plurality of horizontal members connecting said frames, a plurality of removable trays adapted to be positioned in said support and supported on said horizontal frame connecting members, said zontal frame connecting members, said zontal frame connecting members, said trays having front, rear and side members and bottom covered with wire mesh, a horizontal angle bar secured to each side of said tray, cut out portions in the vertical members of the front frame of vertical members of the front frame of said support adapted to receive the hori-zontal angle bars of said trays, cut out portions in the horizontal frame connect-ing members of said support, means on said trays to abut against said horizontal frame connecting members of said sup-port to prevent the accidental withdrawal of said trays.

ABSORPTION TYPE RE 1,916,886. ABSORPTION TYPE RE-FRIGERATING APPARATUS. Peter Kohler, Stockholm, Sweden, assignor, by mesne assignments, to Electrolux Servel Corp., New York, N. Y., a Corporation of Delaware, Filed April 20, 1931, Serial No. 531,436, and in Germany Aug. 25, 1930. Renewed July 2, 1932. 14 Claims. (Cl.

In absorption refrigerating apparatus of the pressure equalized type, means for circulating absorption liquid between

the generator and absorber comprising a the generator and absorber comprising a fluid tight vessel located below the generator liquid level, a pipe connected below the liquid level to the generator and extending into said vessel terminating near the top thereof, a valve pipe connected at one end to the absorber and terminating that the charge of the control o one end to the absorber and terminating at its other end in a siphon which extends into said vessel below the opening of the first said pipe, said valve pipe being formed with two U-bends below the generator liquid level, and a pipe connecting the lower part of said vessel to the rising part of said valve pipe adjacent the absorber at a level above the opening of said siphon in said vessel.

1,916,901. REFRIGERATING SYSTEM AND STRUCTURE THEREFOR. Nathaniel B. Wales, New York, N. Y., assignor to Vaporedair Corp., New York, N. Y., a Corporation of New York. Filed Oct. 29, 1932. Serial No. 640,290. 9 Claims. (Cl. 62—104.) 4. A refrigerator for the preservation of vegetables and the like having means to refrigerate a body of water located in a



sump in its base, said refrigerator having open containers for said vegetables therein, an electric motor operated blower positioned in the top of said refrigerator and means operated by said blower to elevate said refrigerated sump water and atomize and distribute said water over said containers.

1,916,907. VENTILATING AND AIR-CONDITIONING APPARATUS. Don A. Sargent, Portland, Me. Filed Feb. 15, 1933. Serial No. 656,774. 8 Claims. (Cl. 257-8.)

2. A device of the character described comprising a screen-box adapted to be positioned in a window frame beneath the raised lower sash therefor, a screen remarkly recorded to prove the control of the movably mounted in and adjacent the out-door side of said screen-box, an air-con-ditioning box extending from the indoor side of said screen-box, an air-condition-ing box, adjacent said screen-box, a fan wheel in said air-conditioning box, and means to rotate said fan wheel.

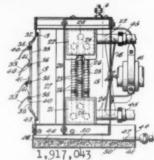
1,917,006. AIR CONDITIONING METH-OD AND APPARATUS. Samuel M. Ander-son, Sharon, Mass., assignor to B. F. Sturtevant Co., Hyde Park, Mass., a Corpo-ration of Massachusetts. Filed July 18, 1931. Serial No. 551,630. 19 Claims. (Cl.

62-117.)

16. A method of conditioning air which consists in circulating liquid through air cooling devices, intermittently cooling the liquid and by-passing it around the cooling devices when the cooling of the liquid begins and until the liquid is cooled to a predetermined towards. predetermined temperature.

1,917,043. COOLING UNIT. Thornton Lewis, Cynwyd, Pa., assignor, by mesne assignments, to Carrier Research Corp., Newark, N. J., a Corporation of New Jersey. Filed July 28, 1930. Serial No. 471,179. 6 Claims. (Cl. 62—103.)

5. In a heat exchanger, the combination of a casing, a cooling coil in said casing, means to circulate air through said coil



and casing, a receptacle for collecting drip from said casing and said coil, a false bottom in said receptacle, and an insulat-ing material between said false bottom and the real bottom thereof.

1,917,045. APPARATUS FOR CONTROLLING THE LEVEL OF LIQUIDS. Henry H. Marshall, Highland Park, N. J. assignor, by mesne assignments, to Carrier Research Corp., Newark, N. J., a Corpo-ration of New Jersey. Filed May 8, 1930. Serial No. 450,653. 6 Claims. (Cl. 62—126.) 1. In a refrigerating system, the com-

In a retrigerating system, the com-bination with a condenser, a conduit to withdraw condenser and a thermostatic valve controlled by a diaphragm and con-trolling such withdrawal of liquid refrig-erant, of a conduit for supplying refriger-ant vapor to said condenser and having a horizontal portion at a predetermined level horizontal portion at a predetermined level for the maintenance of liquid level in said for the maintenance of liquid level in said condenser, a jacket form thermal chamber surrounding such vapor supplying conduit and connected with said valve at one side of said diaphragm to open said valve upon decrease of pressure in said thermal chamber and to close said valve upon increase in pressure, said jacket around said thermal chamber being connected at its lower part with the liquid containing part of the condenser and at its upper part with the vapor containing part of the condenser.

1,917,048. TELLTALE MEANS. Thomas Midgley, Jr., Worthington, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Cor-poration of Delaware. Filed Oct. 30, 1931. Serial No. 572,206. 1 Claim. (Cl. 116—114.) A frozen food package comprising a container, a wrapper of transparent material enclosing at least a portion of said container, and a visible character formed of

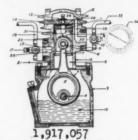
frozen material located between said transparent material and said container, said frozen material and said container, said frozen material being adapted to melt and to permanently change in form when the temperature of the package rises to the temperature below which it is desired to maintain the frozen food maintain the frozen food.

1,917,056. REFRIGERATOR AND COOL-Ing APPARATUS. John B. Peck, Richmond Heights, Mo., assignor to Joseph M. Brown, St. Louis, Mo., and Margaret Peck, Richmond Heights, Mo. Filed July 13, 1932. Serial No. 622,301. 2 Claims. (Cl.

1. A refrigerator comprising a box having inner walls spaced from the box walls to provide an ice chamber and an air circulating space around said ice chamber, said box having an air inlet and an air outlet, air moving devices connected to the inlet and outlet respectively, means for dividing the air flow as it enters said box whereby part will pass over the ice chambers. whereby part will pass over the ice cham-ber and part under the ice chamber, a food storage chest within the ice chamber, said chest and box having one wall in common and a door in said wall, and means for draining the ice chamber.

1,917,057. COMPRESSOR. Maurice H. Pendergast, Utica, N. Y., assignor to Brunner Mfg. Co., Utica, N. Y., a Corpora-tion of New York. Filed June 1, 1932. Serial No. 614,791. 6 Claims. (Cl. 230—190.)

1. In a compressor the combination of hollow casing members forming a vertical compression cylinder and, communicating therewith below, an oil chamber, and having an outlet port leading from the upper end of the cylinder and an inlet port to the cylinder, a passage leading to said inlet, a by-pass extending from said passage to the oil chamber, a check valve



trolling said by-pass and tensioned to open towards said oil chamber on upward movement of the piston, a check valve on the outlet port, a rotatable shaft horizontally mounted in said chamber, an eccentric on said shaft, a piston mounted in the cylinder and connected to said eccentric and a check valve on the piston.

FERRO MAKES FACTORY OFFICES LARGER

CLEVELAND — Factory offices of the Ferro Enamel Corp. here are be-ing enlarged, and the company has engaged H. Edward Winter, artist, to execute large porcelain enamel placques for the remodeled quarters.

FREEZENE

WHITE REFRIGERATOR OILS NON-SLUDGING Non-Gumming EFFICIENT AT HIGH AND LOW TEMPERATURES REFINED AT OUR OWN REFINERIES

L. SONNEBORN SONS, INC.

New York Office 83 LEXINGTON AVE.

REFINERS OF WHITE OILS & PETROLATUMS Refineries | PETROLIA, PA.

Chicago Office 820 TOWER COURT

Test it Compare itand you will specify it!



Pure, bone-dry and of constant, uniform quality, every cylinder of Ansul Sulphur Dioxide is given an individual laboratory analysis before it leaves our plant.

The red tag you find on every cylinder is our guarantee to you that you are receiving the best refrigeration grade sulphur dioxide we know how to manufacture. If you will give Ansul Sulphur Dioxide the opportunity, through the medium of a trial shipment, we know that it will prove its own claims.

Available at 45 distributing centers. Write for complete prices and the location of the source of supply nearest you.

ANSUL SULPHUR DIOXIDE ANSUL CHEMICAL CO. - - MARINETTE, WIS.

When Special Coils Are Needed Here's Quick Service

Now Over 40,000 Larkin Coils in Daily Use

E VERY normal coil requirement Can be supplied from our line of 124 Standard Models and Sizes all of which are stocked for quick delivery at Atlanta, Brooklyn and Chicago.

Occasionally an unusual installa tion requires a special size Coil.
These Coils are made to order only at our Atlanta factory. Our production facilities are geared to fast special order service.

STANDARD FACTORY EQUIPMENT WITH

COPELAND : SERVEL : WILLIAMS ICE-O-MATIC : MAYFLOWER : UNIVERSAL : KULAIR : ZEROZONE : M & E : MODERN : STARR : MOHAWK : DICELER : LIBERTY : H. M. Robins Co., Export and Others.

LARKIN Refrigerating Corporation

WAREHOUSES Brooklyn - Chicago



Manufacturers ATLANTA, GA., U.S.A. U.S. PATENT No. 1,776238.



BUYER'S GUIDE

MANUFACTURERS SPECIALIZING IN SERVICE TO THE REFRIGERATION INDUSTRY

A NEW FIN COIL by PEERLESS

Wedge-locked and edge-locked aluminum fins on tinned copper tubing for methyl chloride, sulphur dioxide, F-12, etc.,—aluminum tubing for ammonia. Absolute Metal to Metal Contact.

A Superior Coil in which Soldered Return Bends have been eliminated.

Priced to meet 1933 conditions. Write-Wire for Catalog.

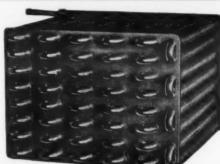
PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.



Highest Efficiency With Smallest Number of Joints

Rome-Turney Radiator Co. Rome, N.Y.

Makers of Rome Condensers and Helical Finned Tubing





Dayton V. Belts

For all makes and types of refrigerators. There is a stock near you. Ask for price list and name of your nearest distributor.

THE DAYTON RUBBER MFG. CO. Dayton, Ohio

The World's Largest Manufacturer of V-Belts

The Dayton CARRIER Truck **Deliver Your Refrigerators**

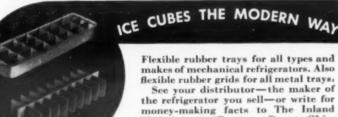
on Rubber Type X has 53 inch Handles and 8 inch Rubber Wheels. Type Y has 70 inch Handles, 5 inch Rubber Wheels

Type X with one strap \$16.00 Type Y with one strap \$17.50 f.o.b. Dayton

International Engineering Inc.

Dayton, Ohio 15 Park Row — New York





See your distributor—the maker of the refrigerator you sell—or write for money-making facts to The Inland Manufacturing Company, Dayton, Ohio. exo Trays . Hexo Grids



BEER PUMP

The Waco Beer Pump has no crank case filled with oil like the air compressor -- it is an air pump -- designed expressly for dispensing clean wholesome air for serving beer-it fits in anywhere-write for details and territory offerings.

WATER APPLIANCE CO. MILWAUKEE

A good product sold at 1933 prices by a profitable distributor policy should interest you.

BRUNNER MANUFACTURING CO.

UTICA, N. Y.

REFRIGERATING EQUIPMENT

QUESTIONS

American Beer Exposition

No. 1286 (Manufacturer, Minnesota)

"Recently I requested information regarding the American Beer Exposi-tion to be held in Cleveland, Sept. 2 to 9, and you directed me to Mr. J. H. Lanyon at the Hotel Hollenden, Cleveland. He has evidently left that hotel, as my letter was returned un-claimed. Can you give me his present address?"

Answer-Mr. Lanyon is no longer connected with the exposition. How-ever, Ralph Newman, managing director, with headquarters at the Hollenden hotel, will be glad to furnish complete

Detroit Expansion Valves

No. 1287 (Manufacturers' representative, South Carolina)—"Kindly furnish us with the name and address of the company which makes Detroit thermostatic expansion valves."

Answer-Detroit Lubricator Co., 5842 Trumbull Ave., Detroit, Mich.

Coin Meters Wanted

No. 1288 (Dealer, New York)—"We understand there are a number of refrigerator dealers in various parts of the country who operated on a meter payment plan and later abandoned it, leaving them stocked with a number of meters for which they have no further use. If you know of any such dealers please let us know, as we are interested in buying any reasonable quantity, providing the price is low enough."

Cabinet Hardware

No. 1289 (Manufacturer, Canada)— "Would you please furnish us with the names of manufacturers of refrigerator hardware. We are particularly interested in semi-concealed hardware.' Answer-All manufacturers of re-frigerator hardware are listed on page 206 of the Refrigeration Directory and Market Data Book.

Air Conditioning

No. 1290 (Electrical league, New York)—"Will you be so good as to send us a complete list of manufacturers of air-conditioning equipment."

Answer—See the July 12 issue of Electric Refrigeration News.

Solid CO2 Household Refrigerator

No. 1291 (Manufacturers' representative, Hawaii)—"We understand that some 15,000 household refrigerators are now being used in Europe with solid CO_2 as the cooling medium. Since dry ice is manufactured here in Hawaii, we have been discussing plans for possible marketing of refrigerators constructed for the use of dry ice.
"Would it be possible for you to put

us in touch with an American manufacturer of suitable cabinets for this? Peculiar conditions here in Hawaii might provide a substantial market for this method of refrigeration."

Answer—You probably refer to the "Carba" household refrigerator using solid CO₂ which was developed in Europe, and is used extensively there. American patent rights to the "Carba" system are owned by the International Carbonic Engineering Co., Kennett Square, Pa

Ice Cream Mixers

No. 1292 (Manufacturer, Michigan)— 'We are interested in obtaining the names of firms manufacturing an electric ice cream mixer which is attached to one of the trays of the evaporator of an electric refrigerator, and stirs the mixture while it is freezing."

Answer—Our records show two manufacturers: Alaska Freezer Co., Inc., Winchendon, Mass., and S. M. Howes Co., 511 Medford St., Boston,

Milk Coolers

No. 1293 (Dealer, Massachusetts)-"I ave a few customers that are in the market for milk coolers, and I do not know who manufactures them. you please give me names and ad-dresses of several manufacturers so that I can get in touch with them, or give them my name and have them write to me.

Answer-See page 272 of the Refrig-eration Directory for a complete list of milk cooler manufacturers.

"Chemical" Refrigerator

No. 1294 (Dealer, New York)-"Can you furnish us with the name of an American distributor or importer which handles an iceless refrigerator that operates by adding a chemical about every two months? The box weighs only about 40 lbs., and is supposed to be manufactured in Ger-

Answer-Does any reader know about this marvel?

Eutectic Brine Coils

No. 1295 (Distributor, Montana)— "We are interested in a coil to be used with a display case, and provided with a hold-over capacity so that it can be used with a gasoline engine driven compressor. We understand that a

Kold-Hold company has such a coil, and that the company is backed by R. E. Olds. We will also appreciate any information about such a coll from any other manufacturer."

Answer—The Kold-Hold Mfg. Co.

(backed by R. E. Olds) can be addressed at Olds Tower Bldg., Lansing.

Refrigeration Schools

No. 1296 (Indiana)—"Will you please refer me to any schools offering a complete training in servicing and installing electric refrigeration and air-conditioning equipment?"

Answer-See list of schools on page 355 of the Refrigeration Directory.

Capacities and Prices
No. 1297 (Dealer, Arkansas)—"Can you give me information as to the ice-melting capacities of the entire line of Norge and General Electric, and on the standard Frigidaire models? I would also like to know the f.o.b. factory prices of the above models, and of the Kelvinator line."

Answer—See the March 22 issue of ELECTRIC REFRIGERATION NEWS which featured specifications and prices, and note also the June 21 and 28 issues which report price changes in Kelvinator and General Electric models

KELVINATOR CONTESTS HELD IN FOREIGN LANDS

DETROIT-A number of Kelvinator Corp.'s sales outlets in foreign countries are now in the midst of sales contests, according to reports received at the factory here. Miss N. E. Corke and V. E. Green of

Kelvinator, Ltd., in London, England, are leading in the Grand Motor Rally contest under way there. A campaign is in progress by Establissments DeHaes, S.A., Brussels, Belgium, according to M. LeDuc, contest director there. A. VanSintjan is leading sales-man, with 120 per cent of quota sold to date, and Salesmen Ghion and Meode are in second and third positions.

In Italy, a sales contest is being held by LaNord America, S.A., under super-vision of Sr. Alfredo Negro, general manager of that outlet. K. Hayashida, with 8,560 yen in Kelvinator sales so ored by Ryobi Denki Shokai, Ltd., Tokio, Japan. Salesmen Yamasaki, Uemura, and Kato are also competing in this drive

Tagliabue Introduces Dial Thermometer

BROOKLYN-C. J. Tagliabue Mfg. Co. announces a new 5-in. dial indicating thermometer in a black bakelite case, with a base price of \$15. The indicating pointer is actuated by the motion of a bronze bellows which expands and contracts with temperature

changes.
Connecting the instrument and the bulb are 5 or 10 ft. of spiral brass armored tubing. The new ther-mometers are built to operate between minus 40 and plus 335° F., the most useful ranges for refrigeration work being one from minus 40 to plus 65° F. and another from 10 to 130° F.

Figures of the dial are white on a jet-black background.

2 SOLENOID VALVES MADE BY AUTOMATIC PRODUCTS

MILWAUKEE—Two electric sole-noid valves for controlling the flow of refrigerants have just been introduced by the Automatic Products Co. of this city. Both are designed for 110-volt, a.c. operation. All metal parts are of

brass or rust-resisting steel.

Model 70 is a ½-in. high-pressure valve drawing 10 watts of power. This device uses a small pilot valve which, in opening, permits the pressure of the liquid to operate against a piston to open the main valve. This model has a %-in. port, and a maximum operating pressure of 200 lbs.

Smaller valve, model 73-R, employs an impact-type plunger, and requires a constant current to be maintained in the open position. This valve has %-in. pipe connections, a port 5/32 in. in diameter, and draws 15 watts. Maximum operating pressure is 100 lbs.

7 MISSOURI SALESMEN TO GO TO FAIR

SPRINGFIELD, Mo.-Seven Kelvinator salesmen for the Springfield Gas & Electric Co., Kelvinator dealer under the Ozark Motor Supply Co., have earned a trip to A Century Progress Exposition by selling at least 25 Kelvinators each in a six week's contest.

The men who will make the trip are Merchandise Manager R. L. Shook, J. R. Mdeley, J. C. Weddel, C. L. Jones, C. E. Jarrett, F. A. Hunt, and D. B. Bailey.

D. B. Balley.

The contest took the form of an automobile race from Springfield to.

Chicago. After the Chicago visit, the men will continue on to inspect the factory in Detroit.

CLASSIFIED

PAYMENT in advance is required for advertising in this column.

RATES: Fifty words or less, one insertion \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each.

POSITIONS WANTED

POSITIONS WANTED

POSITION desired as sales engineer or sales supervisor in charge of commercial refrigeration sales. Thoroughly familiar with every phase of Commercial Electric Refrigeration from first contact with prospect to completion of installation, having had several years' experience with the mission. Address Box 576.

leading makes. Nominal salary and com-

FOR SALE

HERMETICALLY SEALED HOUSEHOLD REFRIGERATOR DESIGN—Has many new features. Simple, efficient and a good practical manufacturing proposition. A thoroughly proven rotary compressor. Patents pending. Inquiries are solicited from companies now manufacturing non-hermetic refrigerators or those considering entering the refrigeration field. Box 573.

BUSINESS FOR SALE

FOR SALE: One of the oldest and best refrigeration businesses in New England, employing four installation men. Well advertised. Selling on account of sickness. Marsden's Store Fixture House, Inc., James Street, East Providence, R. I.

MISCELLANEOUS

SPECIAL OFFER-Send \$1.00 for a 17week's trial subscription to Electric Re-frigeration News and receive a free copy of the Beer Cooling Equipment Directory and Handbook to be issued Aug. 15. Address Electric Refrigeration News, 550 Maccabees Bldg., Detroit, Mich.

Trained Men Available

When in need of practical, trained shop mechanics, installation or service men, patronize this FREE Placement Bureau. We have competent, trained graduates available in every locality, to meet your requirements. With or without experience. Ne charge to the men or to you. Write, phone or wire.

Utilities Engineering Institute Wells at Kinzie Street, Chicago

Motor, Transmission, Crank, Eccentric and Compressor Shafts: Send us your blue prints, we will send you our prices. Write today.

MODERN MACHINE WORKS
156 N. Milw. St., Milwaukes, Wis.

Refrigerant Chart

Pocket size, circular, sliding, printed on white celluloid, containing complete set of refrigerant pressures from 14 below to 120 degrees above zero of the following refrigerants: ammonia, freon (F-12), methyl chloride, sulphur dioxide, freezol (isobutane) and ethyl chloride. Also shows methods of leak detection and chemical symbols for above refrigerants as well as many of the constants used in refrigeration calculations.

Price—single—Pifty cents

Price—single—Fifty cents
Lots of ten or more forty cents
Cash or money order with order REFRIGERANT CHART 2305 Emerson Ave., Dayton, Ohio

McCORD REFRIGERATION **PRODUCTS** Commercial Evaporators

Domestic Evaporators

Condensers

McCord Ice Trays

Spiral Finned Tubing

Steel or Copper Pipe

Spiral Copper Finned Iron,

McCORD RADIATOR & MFG. CO.

DETROIT - - MICH.

Nema Code Sets Basic Wage of 35 Cents & 36- and 40-Hour Weeks For Electrical Manufacturers

(Concluded from Page 1, Column 5) cific control of the refrigeration industry as distinguished from provisions in the general code which apply to the electrical industry as a whole."

The question of the affiliation of the parts and supplies manufacturers with Nema, which was discussed at the meeting held here July 5, has been placed before A. W. Berresford, managing director of Nema, and his decision will be transmitted to such manufacturers within a short time. Mr. Ruthenburg declares that there is little doubt that some means of affiliation will be provided, the matter being one of detail rather than of

The code committee of Nema, which rice code committee of Reina, which is comprised of George W. Mason, president, Kelvinator Corp.; J. M. Tritle, vice president, Westinghouse Electric & Mfg. Co.; F. C. Jones, F. R. Fishback, P. B. Postlethwaite, Clarence L. Collen and R. J. Russell, met with Deputy Administrator Allen in

Washington July 5 and 6.
On July 11 the committee reported to a general meeting of the Nema membership held in New York. This meeting was addressed by Gerard Swope, president of the General Electric Co. and a member of the Industry Advisory Committee to the Adminis-trator of the National Industrial Recovery Act; Francis E. Neagle, Nema legal counsel; and Mr. Tritle.

The code and amendments sug-gested by the deputy administrator were discussed, and some revisions were suggested by Nema members. Immediately following the adjourn-ment of this meeting the board of gov-



... is one way of designating Hotel Fort Shelby when you arrive in Detroit. 4 No other large hotel is so close to the principal railway terminals, airports and steamship piers ... so conveniently located to Detroit's shopping, theatre, financial, insurance and wholesale districts and more universally known for Its good food, rooms and service at economical rates. \$900 units . . . all equipped with servidor and private bath. Rooms as low as \$2.50 per day . . . suites \$8.00

Motorists are relieved of their automobiles at the door without service charge. Write for free road map, and your copy of "Aglow with Friendliness," our unique and





ernors met and after final considera-tion of the code sent it to Washington

with a request for a hearing.

Representing the refrigeration division at the Nema meeting July 11 was a committee consisting of G. M. Johnston, president of Universal Cooler Corp. and chairman of the Refrigera-Corp. and chairman of the Refrigeration Division; Howard E. Blood, president, Norge Corp.; W. F. Armstrong, assistant to the president of Frigidaire Corp., and Mr. Ruthenburg. Also in attendance at this meeting were C. E. Wilson, vice president of General Motors Corp.; H. J. Hunt of Trupar Mfg. Co.; and John Millikan, assistant to the president of Servel, Inc.

Mr. Mason, of course, was present in his capacity as a member of the Nema code committee.

Nema code committee. The code as adopted by Nema July 11 is as follows:

Nema Code

National Industrial Recovery Code for the Electrical Manufacturing Industry

To effectuate the policy of Title I of the National Industrial Recovery Act, the following provisions are established as a National Industrial Recovery Code for the electrical manufacturing industry:
I. Definitions: The term "electrical

manufacturing industry" as used here-in is defined to mean the manufacture for sale of electrical apparatus, appliances, material or supplies, and such other electrical or allied products (for example, absorption type refrigera-tors) as are natural affiliates. The term "person" as used herein shall include natural persons, partnerships, associations and corporations. The term "employer" as used herein shall include every person promoting, or actively engaged in, the manufacture for sale of the products of the elec-trical manufacturing industry as herein defined. The term "effective date" as used herein is defined to be the eleventh day after this code shall have been approved by the President of the United States.

II. As required by Section 7 (a) of Title I of the National Industrial Recovery Act, the following provisions are conditions of this code:

"I. That employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection; (2) that no employee and no one seeking employ-ment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) that employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment, approved or prescribed by the President."

III. (a) On and after the effective date employers shall not employ any person under the age of sixteen years.

Basic Wage 35 Cents

(b) On and after the effective date (b) On and after the effective date the minimum wage that shall be paid by any employer to any person engaged in the processing of the products of the electrical manufacturing industry and in labor operations directly incident thereto shall be 35 cents per hour, provided, however, that casual and incidental labor and learners may be paid not less then 80 learners may be paid not less than 80 per cent of such minimum wage, but the total amount paid to such casual and incidental labor and learners shall not exceed in any calendar month 5 per cent of the total wages paid to all process labor by such employer.

(c) On and after September

1933, the minimum wage that shall be paid by any employer to all other emplovees shall be at the rate of \$14 per week, provided, however, that office boys or girls, learners and casual employees may be paid not less than 80 per cent of such minimum wage but the total amount paid to such office boys or girls, learners and casual employees shall not exceed in any calendar month 5 per cent of the total amount paid by such employer to all employees covered by the provisions of this paragraph (c).

(d) The minimum rates of wages provided in this article shall apply to all persons employed in cities of 200,-000 and over. They shall apply in all one of the solution of the sol

36- and 40-Hour Weeks

IV. Employers shall not operate on a schedule of hours:
(a) On and after the effective date,

for persons engaged in the processing

of products of the electrical manufacturing industry, and in labor opera-tions incident thereto, in excess of 36

hours per week.
(b) On and after September 1, 1933, for all other employees, except executive, administrative and supervisory employees and traveling salesmen, in excess of 40 hours per week.

Provided, however, that these limitations shall not apply to those branches of the electrical manufacturing industry in which seasonal or peak demand places an unusual and tem-porary burden for production upon such branches; in such cases no employee shall be permitted to work more than an aggregate of 144 hours per year in excess of the limitations hereinbefore provided, and provided, further, that such limitations shall not apply in cases of emergency. At the end of each calendar month every employer shall report to the supervisory agency, hereinafter provided for, in such detail as may be required the number of man hours worked in that month for emergency reasons, and the ratio which said emergency man hours bears to the total number of man hours of labor during said month.
V. National Electrical Manufactur-

ers Association is hereby designated the agency for administering, supervising and promoting the perform-ance of the provisions of this code by the members of the electrical manu-

facturing industry.

For the purpose of carrying out the provisions of the National Industrial Recovery Act and complying with the spirit thereof every employer in the electrical manufacturing industry shall prepare and furnish to National Electrical Manufacturers Association not less than once in each year an earnings statement and balance sheet in a form approved by the board of governors or the executive committee of National Electrical Manufacturers Association or acceptable to any rec-ognized stock exchange.

Statistics Required

With a view to keeping the President of the United States and the administrator informed as to the observance or non-observance of this code, and as to whether the electrical manufacturing industry is taking appropriate steps to effectuate in all respects the declared policy of the National Industrial Recovery Act, each employer shall prepare and file with such person or organization as the board of governors or the executive committee of National Electrical Manufacturers Association may designate and at such times and in such manner as may be prescribed statistics of plant capacity, volume of production, volume of sales in units and dollars, orders received, unfilled orders, stocks on hand, inventory, both raw and finished, number of persons employed, wage rates, earnings, hours of work, and such other data or information as the board of governors or the executive committee of National Electri-cal Manufacturers Association may

from time to time require.

VI. Except as otherwise provided in the National Industrial Recovery Act all statistical data filed in accordance with the provisions of Article V shall be confidential and the data of one employer shall not be revealed to any other employer except that for the purpose of administering or en-forcing the provisions of this code, the board of governors or the executive committee of National Electrical Manufacturers Association, by their duly authorized representatives, shall have access to any and all statistical data that may be furnished in accordance with the provisions of this code.

VII. Any employer may participate in this code and in any revisions or additions thereto and receive the bene-fits thereof by accepting the proper pro rata share of the cost and re-sponsibility of creating and administering it, either by becoming a mem-ber of National Electrical Manufac turers Association or by paying to it an amount equal to the dues from time to time provided to be paid by a member in like situation of National Electrical Manufacturers Association.

Cost-Accounting System

VIII. Every employer shall use an accounting system which conforms to the principles of and is at least as detailed and complete as the uniform and standard method of accounting set forth in the sixth edition of the Manual of Accounting, prepared and published by the National Electrical Manufacturers Association, and a costing system which conforms to the principles of and is at least as detailed and complete as the standard and uniform method of costing to be formulated or approved by the board of governors or executive committee of National Electrical Manufacturers Association, with such variations therefrom as may be required by the individual conditions affecting any employer or group of employers and as may be approved by the board of governors or the executive committee of National Electrical Manufacturers Association or the supervisory agency and made supplements to the said Manual of Accounting or method of costing.

No Sales Below Cost

IX. No employer shall sell or exchange any product of his manufac-

ture at a price or upon such terms or conditions that will result in the cus-tomer paying for the goods received less than the cost to the seller, deter-mined in accordance with the uniform and standard method of costing here-inabove prescribed, provided, however that dropped lines, seconds, or inven-tories which must be converted into cash to meet emergency needs may be disposed of in such manner and on such terms and conditions as the supervisory agency may approve and as are necessary to move such product into buyers' hands, and provided fur-ther that selling below cost in order to meet existing competition on products of equivalent design, character, quality or specifications shall not be deemed a violation of this Article if provision therefore is made in supplemental codes hereafter prepared for any branch or subdivision of the industry.

X. If the supervisory agency determines that in any branch or subdivi-

sion of the electrical manufacturing industry it has been the generally rec-ognized practice to sell a specified product on the basis of printed net price lists, or price lists with discount sheets, and fixed terms of payment which are distributed to the trade, each manufacturer of such product shall within ten days after notice of such determination file with the su-pervisory agency a net price list or a price list and discount sheet as the case may be individually prepared by him showing his current prices, or prices and discounts, and terms of payment, and the supervisory agency shall immediately send copies thereof to all known manufacturers of such specified product. Revised price lists with or without discount sheets may be filed from time to time thereafter with the supervisory agency by any manufacturer of such product, to become effective upon a date specified by the supervisory agency and copies thereof with notice of the effective date specified shall be immediately sent to all known manufacturers of sent to all known manufacturers of such product, who thereupon may file, if they so desire, revisions of their price lists and/or discount sheets, which shall become effective upon the date when the revised price list or discount sheet first filed shall go into effect.

If the supervisory agency shall de termine that in any branch or sub-division of the electrical manufacturing industry not now selling its product on the basis of price lists with or without discount sheets with fixed terms of payment the distribution or marketing conditions in said branch or subdivision are similar to or the same as the distribution or marketing conditions in a branch or subdivision of the industry where the use of price lists with or without discount sheets is well recognized, and that a system of selling on net price lists or price lists and discount sheets should be put into effect in such branch or subdivision, each manufacturer of the product or products of such branch or subdivision shall within twenty days after notice of such determination file with the supervisory agency net price lists or price lists and discount sheets as the supervisory agency may direct containing fixed terms of payment showing his prices and discounts and terms of payment, and such price lists and/or discount sheets and terms of payment may be revised in the

manner hereinabove provided

No employer shall sell directly or indirectly, by any means whatsoever, any product of the industry covered by the provisions of this article at a price lower or at discounts greater or on more favorable terms of payment than those provided in his cur-rent net price lists or price lists and discount sheets.

XI. Aggregations of employers having a common interest and common problems will be grouped by National Electrical Manufacturers Association for administrative purposes in various subdivisions or product classifications.

Supervisor on Each Group

XII. In each subdivision or product classification there will be a supervisory agency approved or appointed by the board of governors or the execu-tive committee of National Electrical Manufacturers Association. If formal complaint is made to National Electrical Manufacturers Association that the provisions of this code have been violated by any employer, the proper supervisory agency shall investigate the facts and to that end may cause such examination or audit to be made

as may be deemed necessary.

XIII. The President may from time to time cancel or modify any order, approval, license, rule, or regulation issued under Title I of the National

Industrial Recovery Act.

XIV. Such of the provisions of this code as are not required by the National Industrial Recovery Act to be included herein may, with the approval of the President of the United States, be modified or eliminated as States, be modified or eliminated as changed circumstances or experience may indicate. This code is intended to be a basic code, and study of the trade practices of the electrical manufacturing industry will be continued by the board of governors of National Electrical Manufacturers Association with the intention of submitting from time to time additions to this code applicable to all employers in the elec-trical manufacturing industry and supplemental codes applicable to one or more branches or subdivisions or product classifications of the electrical manufacturing industry, such supplemental codes, however, to conform to and be consistent with the provi-sions of this code as now constituted

or hereafter changed.

XV. If any employer of labor in the electrical manufacturing industry is also an employer of labor in any other industry, the provisions of this code shall apply to and affect only that part of his business which is included in the electrical manufacturing industry.

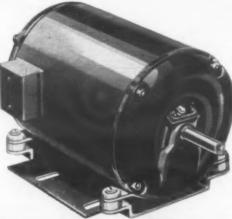
150 GRUNOW DEALERS MEET IN MINNEAPOLIS

MINNEAPOLIS-Roycraft Co., Northwest distributor for Grunow re-frigerators and Philco radios, was host to 150 dealers from this territory during an "open house" held at the company's headquarters here July 5 to 7,

Visiting dealers had conferences with officials of the distributorship regarding sales plans for the summer and fall season. Bud Watson of St. Paul's Emporium department store won a free trip to A Century of Prog-ress in a contest held for the dealers.

Built-In!

The capacitor is built inside the motor frame



A New Capacitor Motor Perfected By Howell

The capacitor is built into these newest fractional horsepower motors . . . It is constructed inside the motor frame . . . With this development Howell engineers have overcome the greatest objections to this type of motor—the space and appearance factors.

Now you can power your product with a capacitor motor that is compact, light in weight, neat in appearance, quiet in operation. And a motor that has an abundance of power for its rating, high starting torque, high efficiency, high power factor and liberal overload capacity.

Here is the ideal motor for refrigeration applications. Both horizontal and vertical types are available, with rubber or rigid mounting on the horizontal models. Also stators and rotors for built-in equipment.

Howell Sales and Service in over 50 Principal Cities

Howell Electric Motors Co.

Pioneer Builders of Capacitor Start Motors

A Century of Progress Supplement

ELECTRIC

IN TWO PARTS-PART TWO

REFRIGERATION N

Vol. 9, No. 12, SERIAL No. 226 ISSUED EVERY WEEK

Copyright, 1933, by Business News Pub. Co.

DETROIT, MICHIGAN, JULY 19, 1933

THREE DOLLARS PER YEAR TEN CENTS PER COPY



Illinois Host building is considered one of the most beautiful buildings at the Fair.



Sue Grant and Marge Brucks, Jantzen bathing girls, get their own luncheon at the Fair. They are using a G-E kitchen.



Lighting on the three spires symbolizing the three equal branches of U. S. government B. R. (Before Roosevelt) makes the Federal building (above) a sight to behold at Chicago's A Century of Progress exposition.



himself at one of those rare objects at the Fair-a water cooler.

Rufus Dawes, chief executive of A Century of Progress, refreshes Above may be seen the portion of the General Electric exhibit devoted to a talking kitchen, designing room, and work kitchen.



Creating desire in the minds of millions for the GENERAL ELECTRIC KITCHEN



THE General Electric exhibit at A Century of Progress is attracting the attention of millions. Greatest interest is centered in the General Electric Talking Kitchen and its story of freedom from routine drudgery. Specially installed sound equipment broadcasts its appealing message to thousands of interested prospects—tells them of the new modern way to plan kitchen duties—swiftly, automatically, electrically! The voice of the General Electric Talking Kitchen never fails to command attention—"I am the new 'guest-room' of the home—attractive, cool, clean and comfortable... I banish kitchen drudgery, save you hundreds of steps and bring you hours of new freedom every day... Only \$7 a month will start one in your home... You can build a complete and individual General Electric Kitchen step-by-step, and pay for it out of the savings it makes possible..."

Women who see the General Electric Kitchen at the World's Fair and hear its amazing story of freedom, efficiency and economy, will never again be satisfied with their old-fashioned kitchens. Not only through the World's Fair exhibits, but through nation-wide education and promotion, General Electric is creating a desire in the minds of millions for the General Electric Kitchen—the new guest room in the home!



The General Electric Kitchen stimulates sales of G-E Refrigerators, G-E Ranges, G-E Dishwashers, and other G-E kitchen appliances. Every woman wants a kitchen where work is reduced to a minimum. An all-electric kitchen is her goal. Working towards this objective, she qualifies as a "repeat" customer for the G-E retailer. For example, she may first buy a G-E refrigerator, then a G-E range, then a G-E dishwasher and then the smaller appliances until she has a complete General Electric Kitchen. We call it "ensemble selling." General Electric retailers call it a marvelous business developer and profit builder. They "sell" the General Electric Kitchen idea at every opportunity for it offers the possibility of three or more profits instead of just one profit.

General Electric provides a dealer plan of every type, from the highly specialized complete organization to the small unit display operated in connection with other business. Whether it's a one-unit outlet or an operation dealing in carloads—there's a General Electric plan, featuring the General Electric Kitchen, for every retailer. General Electric Co., Specialty Appliance Sales Dept., Section DF-72, Nela Park, Cleveland, O.

GENERAL E ELECTRIC KITCHEN

... the new guest room of the home



Streams of illuminated water shoot starward in the court of the Electrical building, while in the background powerful beams of light split the upper darkness to add color to the night Fair.

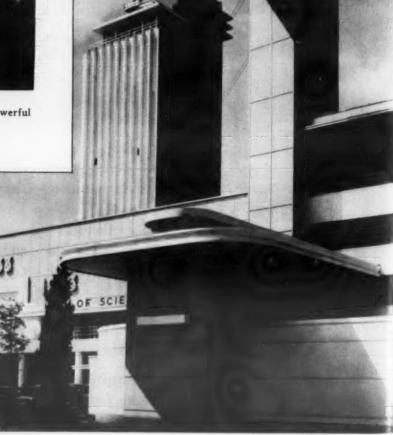


Judge Charles Edward Bull, "the living Lincoln," looks over Rutledge Tavern's food supply, which is refrigerated by special General Electric equipment.



Replica of Abraham Lincoln's birthplace, part of the Lincoln group at the Fair.





Above is the Fair's reproduction of the "Wigwam," in which Lincoln was nominated for the presidency.





ntirety by ne exposition. It took a Yucatan expedi-sterial for its edifice.

"Billy" Sawyer (right), 88-year-old resident of Providence and life-long friend of Thomas A. Edison, sees the "electric eye" in operation.



Here is a corner of the Fair's faithful reconstruc- Two Antwerp girls take time out from their tion of a Belgian village.

duties at the Belgian village.



W. B. Wheelwright of the Paper Foundation in one of the many G-E kitchens at the Fair.



Little Joyce Hoff of Calumet City, Ill., is afraid she'll find no food in the G-E flat top refrigerator.



Mrs. Elizabeth Durbrow demonstrates the G-E Health Kitchen.



tower of the dazzling Hall of Science. At night concealed neon tubing makes this building a gorgeous spectacle.

and illumination

This tower of the Belgian village commands all eyes from a hillock.



At night the Fair becomes a fairyland of light and color. This scene was taken from Northerly Island.



Admiral Byrd's polar ship (left) is moored in a Fair lagoon.

Stuttering Ros-coe Ates (right) and his charming daughter, Dorothy, are making movies at the Hollywood show. In this picture they are enjoying themselves in a G-E health kitchen.



Five pavilions form the General Exhibits group (below).



H. B. Williams of Minneapolis Chester Cass of Eau Claire, Wis., who are the shortest and tallest men at A Century of Progress, have some fun with a big G-E commer-cial refrigerator.



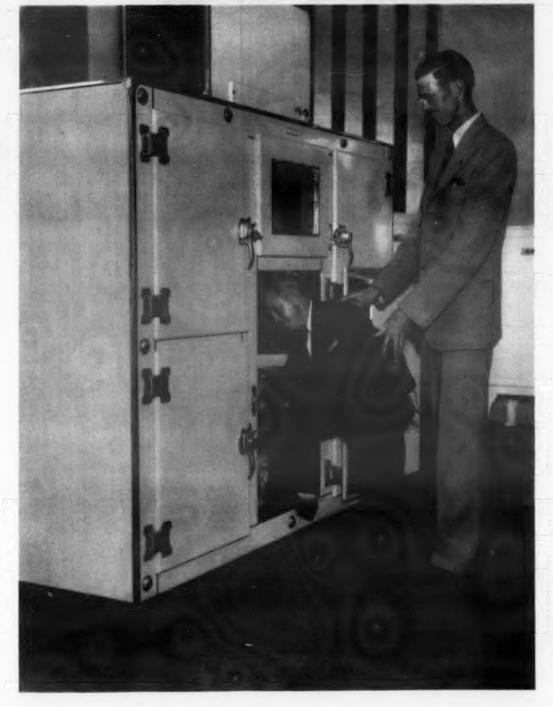




 $K.\ R.\ Ross$ and $L.\ W.\ Shugg$ are managing G-E exhibits at the Fair.

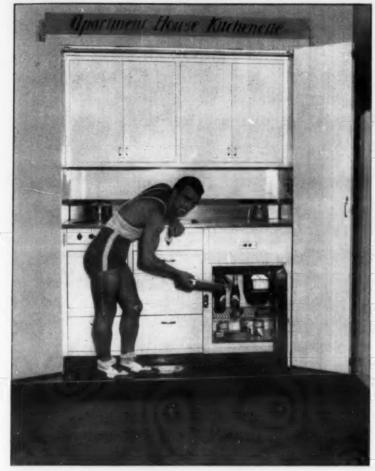


Interior of the Fair's replica of the Golden Pavilion of Jehol, famous Chinese temple.





Dominating the Fair is the Skyride, which rises 628 feet into the air. Above may be seen one tower and four of the rocket cars, which go from mainland to Northerly Island.



Pete Des Jardines, 1928 Olympic diving champion, makes use of the folding kitchenette at the G-E exhibit.



Leading north from the Hall of Science is the Avenue of Flags (above).





W. M. Perry, Columbia, S. C.,
Atlantic district winner of
G-E Man Hunt contest.

E. H. Schaefer, Milwaukee,
Midwestern district winner
of G-E Man Hunt contest.



M. E. Brown, Louisville, Ky., Central district winner of G-E Man Hunt contest.



This striking design (above) is the north entrance to the Hall of Science.



Masters of Ballyhoo snare quarters from crowds at the Midway, the Fair's amusement sector (above left).



In a Rostone model house is a complete all-electric kitchen supplied by General Electric Co. (Left.) This is one of many modernistic homes at the Fair which are similarly equipped.

W. E. Graham, Butte, Mont..

is Rocky Mountain district

winner of G-E Man Hunt.



Bill Thompson (above), G-E distributor in Boston, captured first honors in the recent "Man Hunt" contest, and with some 500 other winners is enjoying a trip through A Century of Progress at the expense of the General Electric Co.



E. B. Edmundson, Houston, Tex., Southwestern district leader in G-E Man Hunt.



L. H. Bennett, San Francisco, winner of G-E Man Hunt in Pacific Coast district.